

In the Matter Of:

FARM BUREAU MUTUAL INS. CO. OF MI vs CNH INDUSTRIAL AMERICA, LLC

JERRY DAHL, P.E.

August 21, 2018

Prepared for you by



Bingham Farms/Southfield • Grand Rapids
Ann Arbor • Detroit • Flint • Jackson • Lansing • Mt. Clemens • Saginaw • Troy

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<p style="text-align: right;">Page 5</p> <p>1 Grand Rapids, Michigan 2 Tuesday, August 21, 2018 3 9:30 a.m.</p> <p>4</p> <p>5</p> <p>6 JERRY DAHL, P.E., 7 was thereupon called as a witness herein, and after 8 having first been duly sworn to testify to the truth, 9 the whole truth and nothing but the truth, was 10 examined and testified as follows:</p> <p>11 EXAMINATION</p> <p>12 BY MR. ROBINSON:</p> <p>13 Q. Mr. Dahl, we met off the record, but just for the 14 record, my name is Chris Robinson. I represent CNH 15 Industrial America, LLC. The name keeps changing, but 16 that's what it is at this point.</p> <p>17 We're here for your deposition today in the 18 case of Farm Bureau, on behalf of New Flevo Dairy, 19 against CNH Industrial America.</p> <p>20 I understand that you have prepared and 21 have written an expert report, and you're planning to 22 offer expert opinions in this case. Is that correct?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. Have you ever given a deposition before?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 7</p> <p>1 A. I brought a hard copy of my expert report. 2 Q. Okay. 3 A. I brought a hard copy of my CV -- 4 Q. And before you go too far, are these copies that we're 5 able to mark as exhibits, or do you need them back? 6 A. These are hard copies that can be marked as exhibits. 7 Q. Okay. 8 A. I have a hard copy of a reference article in my report 9 for "Emission Control Technologies for Diesel-Powered 10 Vehicles," from the Manufacturers of Emission Controls 11 Association, dated December 2007.</p> <p>12 I have a hard copy of a reference article 13 in my report, "Smoldering Initiation in Cellulosics 14 Under Prolonged Low-Level Heating," by E.L. Schaffer, 15 S-C-H-A-F-F-E-R, from the Forest Products Laboratory, 16 US Department of Agriculture.</p> <p>17 I have a hard copy excerpt from the 18 Ignition Handbook, by Vytenis, V-Y-T-E-N-I-S, 19 Babrauskas, B-A-B-R-A-U-S-K-A-S.</p> <p>20 I have an excerpt from the official New 21 Holland Online Parts Store referencing the series 22 T.390 tractor as a Tier 4A vehicle and a T8.410 23 tractor as Tier 4B vehicle.</p> <p>24 I have a three-page assembly of an image of 25 a T3 -- pardon me, T8.390 tractor from the right side,</p>
<p style="text-align: right;">Page 6</p> <p>1 Q. And how many times, approximately? 2 A. Ten-plus.</p> <p>3 Q. Okay. So you know the ground rules, and just to be 4 quick, we don't have to go over them in detail, but 5 she's taking down everything we say. So we need to 6 make sure we use verbal responses instead of a head 7 nod or head shake or an "uh-uh" or a "huh-huh," 8 something like that.</p> <p>9 Also, since she's taking down everything, 10 we need to make sure we don't speak at the same time. 11 So I'll let you finish your answer before I ask the 12 next question. If you'll do the same for me with my 13 questions, that will make it easier to transcribe.</p> <p>14 If you need to take a break, let me know. 15 If you need to go to the bathroom, smoke, whatever, 16 let me know.</p> <p>17 If you don't understand a question, I'm 18 glad to restate it or rephrase it, and if you don't 19 ask me to do that, I will assume that you understood 20 my question. Fair enough?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. So have you brought anything with you here 23 today?</p> <p>24 A. Yes.</p> <p>25 Q. What have you brought with you?</p>	<p style="text-align: right;">Page 8</p> <p>1 passenger side, showing the field tank and general 2 location of the SCR, with two pages from the New 3 Holland Online Parts Manual that shows the 4 configuration of the SCR and the surrounding fuel 5 tank.</p> <p>6 I have another assemblage, which is two 7 images of a T8.410 New Holland tractor showing the 8 difference in configuration of the muffler and exhaust 9 system, along with two images from the New Holland 10 Online Parts Store showing the difference in the 11 muffler arrangement.</p> <p>12 I have another document that is "Ignition 13 Time Versus Temperature for Selected Forest Fuels." 14 This is from November 1975, by Guido, G-U-I-D-O, C. 15 Kaminski, K-A-M-I-N-S-K-I, from the University of 16 California at Riverside.</p> <p>17 And I have a document from New Holland 18 Agriculture Product Improvement Program, dated July 19 2014, providing the subject "Excessive Heat At Muffler 20 Inlet Connection."</p> <p>21 Q. And is that all the materials that you've brought 22 today?</p> <p>23 A. Yes.</p> <p>24 Q. And I see you've got notes, and that may be unrelated 25 to this case.</p>

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<p style="text-align: right;">Page 9</p> <p>1 A. Unrelated.</p> <p>2 Q. Okay. Do you have any handwritten notes that you've</p> <p>3 taken throughout your investigation in this case?</p> <p>4 A. I do not.</p> <p>5 Q. And so the total of your thoughts and opinions are in</p> <p>6 your report?</p> <p>7 A. Yes.</p> <p>8 Q. There's not like a separate report that you haven't</p> <p>9 brought with you today?</p> <p>10 A. No.</p> <p>11 Q. Okay. So I'd like to go through --</p> <p>12 A. Let me further clarify that the assignment was</p> <p>13 initially undertaken by Dr. James Smith of our office</p> <p>14 and was carried through, particularly inspection and</p> <p>15 examination of the vehicle. Dr. Smith has departed</p> <p>16 our employ, and I assumed the further investigation</p> <p>17 and report writing.</p> <p>18 There may be other notes and such that</p> <p>19 Dr. Smith may have taken, but that's not my handiwork.</p> <p>20 Q. Would those materials still be in the possession of</p> <p>21 Nederveld?</p> <p>22 A. Yes.</p> <p>23 Q. Is there a file somewhere that would contain those</p> <p>24 documents or information?</p> <p>25 A. There should be.</p>	<p style="text-align: right;">Page 11</p> <p>1 July 19th, 2018, report as Exhibit 23.</p> <p>2 MARKED FOR IDENTIFICATION:</p> <p>3 DEPOSITION EXHIBIT 23</p> <p>4 9:38 a.m.</p> <p>5 MR. ROBINSON: It looks like the</p> <p>6 Manufacturers of Emissions Controls Association,</p> <p>7 December 2007 report, we will mark as Exhibit 24.</p> <p>8 MARKED FOR IDENTIFICATION:</p> <p>9 DEPOSITION EXHIBIT 24</p> <p>10 9:38 a.m.</p> <p>11 MR. ROBINSON: The Ignition Handbook</p> <p>12 excerpt from Vytenis Bab -- do you know how to say the</p> <p>13 last name?</p> <p>14 THE WITNESS: I do not.</p> <p>15 MR. ROBINSON: Okay. I was looking at you</p> <p>16 for help and you weren't offering any.</p> <p>17 THE WITNESS: It wasn't a question.</p> <p>18 MARKED FOR IDENTIFICATION:</p> <p>19 DEPOSITION EXHIBIT 25</p> <p>20 9:38 a.m.</p> <p>21 MR. ROBINSON: That's 25.</p> <p>22 26 we'll mark for the Schaffer article.</p> <p>23 MARKED FOR IDENTIFICATION:</p> <p>24 DEPOSITION EXHIBIT 26</p> <p>25 9:38 a.m.</p>
<p style="text-align: right;">Page 10</p> <p>1 Q. Is that something that throughout today somebody can</p> <p>2 try to locate and see if you still have?</p> <p>3 A. I believe so.</p> <p>4 Q. Okay. At some point we'd like to do that. We don't</p> <p>5 have to do it right now, but just to find out if there</p> <p>6 is that material.</p> <p>7 I assume any work product or materials he</p> <p>8 created in his investigation while working for</p> <p>9 Nederveld still belong to Nederveld, is that correct?</p> <p>10 A. Yes.</p> <p>11 Q. So when he left the employment here, he left -- all of</p> <p>12 the information was retained by this company?</p> <p>13 A. Yes.</p> <p>14 Q. All the documentation, anything he prepared?</p> <p>15 A. Correct.</p> <p>16 Q. Okay. I would like to mark as exhibits these items</p> <p>17 that you've brought here today, and we'll mark them</p> <p>18 sequentially. So we will continue sequentially with</p> <p>19 where we left off yesterday.</p> <p>20 So the first exhibit I will mark is your CV</p> <p>21 as Exhibit 22.</p> <p>22 MARKED FOR IDENTIFICATION:</p> <p>23 DEPOSITION EXHIBIT 22</p> <p>24 9:37 a.m.</p> <p>25 MR. ROBINSON: And I will mark the</p>	<p style="text-align: right;">Page 12</p> <p>1 MR. ROBINSON: 27 is a printout showing</p> <p>2 Tier 4A and Tier 4B models.</p> <p>3 MARKED FOR IDENTIFICATION:</p> <p>4 DEPOSITION EXHIBIT 27</p> <p>5 9:39 a.m.</p> <p>6 MR. ROBINSON: Exhibit 28 will be some</p> <p>7 photographs of the right side of a T8.390, along with</p> <p>8 schematics of the exhaust design.</p> <p>9 MARKED FOR IDENTIFICATION:</p> <p>10 DEPOSITION EXHIBIT 28</p> <p>11 9:39 a.m.</p> <p>12 MR. ROBINSON: 29 will be a picture of a</p> <p>13 T8.410, along with schematics of its exhaust design.</p> <p>14 MARKED FOR IDENTIFICATION:</p> <p>15 DEPOSITION EXHIBIT 29</p> <p>16 9:39 a.m.</p> <p>17 MR. ROBINSON: 30 is the 1974 article by</p> <p>18 Guido Kaminski.</p> <p>19 MARKED FOR IDENTIFICATION:</p> <p>20 DEPOSITION EXHIBITS 30 and 31</p> <p>21 9:40 a.m.</p> <p>22 MR. ROBINSON: 31 is a "Product Improvement</p> <p>23 Program," dated July 2014.</p> <p>24 BY MR. ROBINSON:</p> <p>25 Q. Do these materials comprise the whole of your personal</p>

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<p style="text-align: right;">Page 13</p> <p>1 file and what you have reviewed in preparation of your</p> <p>2 opinions?</p> <p>3 A. No.</p> <p>4 Q. Is there something else that we're missing?</p> <p>5 A. We have quite a few photographs that were collected by</p> <p>6 Dr. Smith, as well as Mr. Wilson, that were reviewed</p> <p>7 in our forensic examination of the file, as well as</p> <p>8 Mr. Wilson's separate report.</p> <p>9 Q. Okay. So I have a copy of Mr. Wilson's report and his</p> <p>10 photographs. But as far as your photographs, I want</p> <p>11 to make sure I have everything that you've looked at.</p> <p>12 MR. ROBINSON: Is that something that you</p> <p>13 could put on to a disc or ...</p> <p>14 MR. CORETTI: You have them.</p> <p>15 MR. ROBINSON: We have all of them?</p> <p>16 MR. CORETTI: Yes.</p> <p>17 THE WITNESS: So, once again, the</p> <p>18 photographs were taken by Dr. Smith. So in terms of</p> <p>19 my photographs, I have no photographs. Nederveld has</p> <p>20 photographs taken by Dr. Smith, which I believe you've</p> <p>21 been provided with.</p> <p>22 BY MR. ROBINSON:</p> <p>23 Q. Okay. And, I apologize, I didn't mean to imply that</p> <p>24 they were photographs that you actually took. I just</p> <p>25 meant Nederveld's photographs.</p>	<p style="text-align: right;">Page 15</p> <p>1 A. I reviewed the documents we had in our file, inclusive</p> <p>2 of our written report. The references within the</p> <p>3 report for the various documents I've provided.</p> <p>4 Reviewed the photographs within the file, both from</p> <p>5 Mr. Wilson and from Nederveld. Reviewed Mr. Wilson's</p> <p>6 report. Reviewed images on the New Holland Online</p> <p>7 Parts Store for configurations and documentation of</p> <p>8 Tier 4A and Tier 4B designations of the T8 tractor.</p> <p>9 Q. Have you reviewed any deposition transcripts?</p> <p>10 A. No.</p> <p>11 Q. Have you been provided with a summary of deposition</p> <p>12 testimony of the owner or operator of this tractor?</p> <p>13 A. No.</p> <p>14 Q. Do you have any idea what they testified about two or</p> <p>15 three weeks ago when they testified?</p> <p>16 A. No.</p> <p>17 Q. Have you talked with Mr. Wilson?</p> <p>18 A. No.</p> <p>19 Q. Have you ever spoken with Mr. Wilson directly?</p> <p>20 A. No.</p> <p>21 Q. Do you know him by reputation in any way?</p> <p>22 A. No.</p> <p>23 Q. I assume you've spoken with counsel, but have you</p> <p>24 spoken with anybody else about this case in</p> <p>25 preparation for today?</p>
<p style="text-align: right;">Page 14</p> <p>1 MR. CORETTI: I sent them to you in a link</p> <p>2 and you guys put them together.</p> <p>3 MR. ROBINSON: I have a lot of photographs,</p> <p>4 I just want to make sure I have all of them.</p> <p>5 MR. CORETTI: There's quite few, I believe</p> <p>6 several hundred.</p> <p>7 MR. ROBINSON: Okay.</p> <p>8 BY MR. ROBINSON:</p> <p>9 Q. You haven't brought any of Nederveld's photographs</p> <p>10 here today. Will you need to have any to reference to</p> <p>11 point out certain issues, or can you do that without</p> <p>12 reference to photographs in this case?</p> <p>13 A. At this point I believe I can do it without reference</p> <p>14 to photographs. If need be, I have them</p> <p>15 electronically available. I can call them up and</p> <p>16 specifically identify them by frame number, image</p> <p>17 number, that you can use for future reference, as</p> <p>18 well.</p> <p>19 Q. Perfect, that will work great.</p> <p>20 All right, I'm going to hand you a copy of</p> <p>21 your CV back, and we can talk about this for just a</p> <p>22 moment.</p> <p>23 Actually, before we move to your CV, I want</p> <p>24 to ask you, what did you do, if anything, to prepare</p> <p>25 for today's deposition?</p>	<p style="text-align: right;">Page 16</p> <p>1 A. No.</p> <p>2 Q. For instance, have you had to bounce ideas off other</p> <p>3 colleagues here at Nederveld to get their thoughts?</p> <p>4 A. No.</p> <p>5 Q. And, I mean, obviously other than Mr. Smith, who I</p> <p>6 assume you worked with in the past when he was still</p> <p>7 with the company?</p> <p>8 A. Correct.</p> <p>9 Q. And, I apologize, Dr. Smith.</p> <p>10 Have you ever spoken directly with any of</p> <p>11 the witnesses involved in the actual fire?</p> <p>12 A. No.</p> <p>13 Q. You haven't interviewed the operator of this tractor?</p> <p>14 A. No.</p> <p>15 Q. Have you personally had the opportunity to look at any</p> <p>16 exemplar tractors that have not been involved in the</p> <p>17 fire?</p> <p>18 A. No.</p> <p>19 Q. And I understand you've reviewed some photographs</p> <p>20 online, but you haven't gone and looked at actual</p> <p>21 in-person examples of a T8.390?</p> <p>22 A. No.</p> <p>23 Q. Who's your current employer?</p> <p>24 A. Nederveld.</p> <p>25 Q. Just generally, what is Nederveld, what does it do?</p>

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<p style="text-align: right;">Page 17</p> <p>1 A. It does great things for people.</p> <p>2 Q. Okay, in what way?</p> <p>3 A. They provide a variety of engineering services, civil</p> <p>4 engineering services, land planning development,</p> <p>5 surveying, and the segment I'm involved with, forensic</p> <p>6 engineering and fire investigation.</p> <p>7 Q. When you say "forensic engineering and fire</p> <p>8 investigation," does that involve litigation</p> <p>9 consultation?</p> <p>10 A. It can.</p> <p>11 Q. What percentage of your practice involves litigation</p> <p>12 work?</p> <p>13 A. I don't have a good answer.</p> <p>14 Q. Is it more than half?</p> <p>15 A. I don't believe so.</p> <p>16 Q. The half that does not -- well, let me rephrase that.</p> <p>17 The portion of your practice that does not</p> <p>18 involve litigation, describe for me what it is that</p> <p>19 you do.</p> <p>20 A. We would be contacted by a client, individual,</p> <p>21 business owner, insurance company, attorney, to</p> <p>22 investigate a loss, damage, accident, fire, injury,</p> <p>23 and to render an opinion in terms of failure, fault,</p> <p>24 causation. Typically a report is issued, and that</p> <p>25 wraps up our investigation.</p>	<p style="text-align: right;">Page 19</p> <p>1 testifying history?</p> <p>2 A. Page 4 and 5 and a portion of 6 correspond to my</p> <p>3 depositions. Page 6 includes a video deposition.</p> <p>4 Page 6 and 7 encompass courtroom testimony.</p> <p>5 Q. The version I have of your CV, and perhaps it's just</p> <p>6 an older version, only has six pages. Is there</p> <p>7 actually a seventh page?</p> <p>8 A. Yes, there is.</p> <p>9 Q. There must be one additional --</p> <p>10 A. Deposition.</p> <p>11 Q. The version I have is from December of 2017, so I bet</p> <p>12 everything was pushed down one. I see in June of 2018</p> <p>13 you testified in a Madison District Public Schools</p> <p>14 matter. Do you recall that?</p> <p>15 A. Yes.</p> <p>16 Q. That's the one that's not on my version. That is on</p> <p>17 the version that you have as Exhibit 22.</p> <p>18 Approximately how many times have you</p> <p>19 testified on behalf of a defendant?</p> <p>20 A. I don't recall.</p> <p>21 Q. Do you know if you've ever testified on behalf of a</p> <p>22 defendant?</p> <p>23 A. I don't recall.</p> <p>24 Q. In that public schools case, were you on behalf of the</p> <p>25 plaintiff or the defendant?</p>
<p style="text-align: right;">Page 18</p> <p>1 It may resurface at sometime in the future,</p> <p>2 fall into litigation, but that's a small percentage of</p> <p>3 the total work that we do.</p> <p>4 As an example, I do about 200</p> <p>5 investigations a year. I don't have 200 litigations a</p> <p>6 year.</p> <p>7 Q. But you are always investigating incidents after they</p> <p>8 occur?</p> <p>9 A. Yes.</p> <p>10 Q. For instance, you're not consulting with companies to,</p> <p>11 say, avoid fire losses in the future, to advise on</p> <p>12 things they can do, like sprinkler suppression systems</p> <p>13 or firebrick walls, or different issues they can</p> <p>14 address to avoid fires?</p> <p>15 A. Correct.</p> <p>16 Q. Okay. Have you ever testified in court before?</p> <p>17 A. Yes.</p> <p>18 Q. Do you have a list of times that you have testified in</p> <p>19 court?</p> <p>20 A. It's within my CV.</p> <p>21 Q. And have you ever been disqualified from a judge or a</p> <p>22 court in testifying?</p> <p>23 A. No.</p> <p>24 Q. I see on the back of your CV, pages 4 and 5 and 6,</p> <p>25 this would comprise an up-to-date list of your</p>	<p style="text-align: right;">Page 20</p> <p>1 A. The defendant.</p> <p>2 Q. Is your investigating always pertaining to fire</p> <p>3 losses, or are there other types of losses you also</p> <p>4 investigate?</p> <p>5 A. My investigations principally relate to mechanical</p> <p>6 items, from my mechanical engineering background. So</p> <p>7 they would be physical objects, functional items,</p> <p>8 equipment, processes, vehicles. There may be</p> <p>9 mechanical items that are involved in a fire loss, and</p> <p>10 I may be called in to examine or further opine</p> <p>11 regarding the cause or victim status of a particular</p> <p>12 mechanical item.</p> <p>13 Q. Do you consider yourself an expert in any particular</p> <p>14 mechanical item, is there one that you're just --</p> <p>15 that's where you typically practice?</p> <p>16 A. No.</p> <p>17 Q. Have you ever served as an expert in a separate matter</p> <p>18 involving farming equipment?</p> <p>19 A. Yes.</p> <p>20 Q. Do you recall the name of that case?</p> <p>21 A. Lalone -- pardon me, in my CV, Exhibit 22, page 5,</p> <p>22 second-to-the-last entry, February 2012, Lalone, et al</p> <p>23 V Riedstra Dairy.</p> <p>24 Q. What was the context of your investigation in that</p> <p>25 case?</p>

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<p style="text-align: right;">Page 21</p> <p>1 A. This was a large carousel dairy milking parlor in 2 which I'm representing the farmer owning the dairy 3 parlor, and a service worker was entrapped, crushed, 4 and incapacitated in the operating on the carousel. 5 MR. ROBINSON: Let's go off the record for 6 just a second. 7 (Off the record at 9:52 a.m.) 8 (Back on the record at 9:53 a.m.) 9 MR. ROBINSON: Okay, back on the record. 10 BY MR. ROBINSON: 11 Q. Other than the Riedstra Dairy matter, have you ever 12 testified or been involved in other cases involving 13 farming equipment? 14 A. Yes. 15 Q. And what was the context of those investigations? 16 A. One investigation was a fatality caused by entrapment 17 in a tractor-and-feed wagon at a dairy. 18 Q. Did that result in a deposition? 19 A. It did not. 20 Q. Who were you, which side were you testifying for in 21 that case -- let me rephrase that. 22 Who hired you to do an investigation? 23 A. The insurance company on behalf of the dairy owner. 24 Q. Any other farming equipment investigations? 25 A. An investigation regarding a vehicle collision between</p>	<p style="text-align: right;">Page 23</p> <p>1 A. Not that I recall. 2 Q. Do you do investigations on behalf of Farm Bureau? 3 A. Yes. 4 Q. Is that one of your major clients, is Farm Bureau? 5 A. No. 6 Q. And I'm asking you because you have several of these 7 incidents where you were investigating on behalf of 8 the farmer, but you were hired by the farmer's 9 insurance company. I'm just trying to understand who 10 your clients are that hire you to do these 11 investigations, what insurance companies. 12 A. A variety. I don't have a -- let me step back. 13 Nederveld does not have a primary 14 relationship for work assignments specific to an 15 insurance company or group of insurance companies, and 16 I believe that any one particular company comprises no 17 more than five percent of our workload. 18 So I could not relate that Farm Bureau is 19 our major client, nor could I relate that any other 20 insurance company is a major client. 21 Q. How many times do you think that you've been retained 22 by Farm Bureau to do investigations? 23 A. I don't have a good answer for that. 24 Q. Is it more than once a year? 25 A. I don't have a good answer for that.</p>
<p style="text-align: right;">Page 22</p> <p>1 a towed farm implement owning to disc and a Chevy 2 Suburban. 3 Q. Did that result in deposition? 4 A. No. 5 Q. And who hired you to do that investigation? 6 A. The insurance company on behalf of the farmer. 7 Q. Any others? 8 A. An investigation in conjunction with a fire 9 investigator for a fire at a dairy. 10 Q. What was involved in the fire? 11 A. Fireworks. 12 A fire investigation and equipment 13 investigation at a hog confinement building. 14 Q. And what was the subject of the investigation? 15 A. Trying to determine the cause of the fire. 16 Q. Was that ever determined? 17 A. I don't recall at this point. 18 Q. Do you recall if it involved some type of farm 19 equipment or implement? 20 A. There were implements in the building at the time. 21 Whether they were involved or not, I don't recall. 22 Q. Were you retained by the insurance company on behalf 23 of the farmer? 24 A. Yes. 25 Q. Any others you can think of?</p>	<p style="text-align: right;">Page 24</p> <p>1 Q. Have you ever been retained by Farm Bureau before this 2 case? 3 A. Yes. 4 Q. Do you have a number, say, more than ten times you've 5 been retained by Farm Bureau? 6 A. Yes. 7 Q. Would it be more than fifty times? 8 A. I don't know. 9 Q. What's the highest level of education you've achieved? 10 A. I have a master's degree of mechanical engineering 11 from Washington University, in St. Louis. 12 Q. What year did you obtain that master's? 13 A. 1983. 14 Q. Where'd you go to college? 15 A. I went to Augustana College, now Augustana University, 16 in Sioux Falls, South Dakota, focusing in mathematics 17 and physics. After three years of attending, I had an 18 opportunity to transfer to either Columbia University, 19 in New York City, or Washington University, in 20 St. Louis, for another two-year period, studying 21 engineering, and at the end of five years both schools 22 grant four-year degrees. 23 So I completed the program at Washington 24 University, in St. Louis, with a bachelor's degree in 25 mechanical engineering, and also having received a</p>

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<p style="text-align: right;">Page 25</p> <p>1 bachelor of arts degree in mathematics and physics</p> <p>2 from Augustana College, now University.</p> <p>3 Q. Where is Augustana College?</p> <p>4 A. Sioux Falls, South Dakota.</p> <p>5 Q. Oh, you just said that, okay.</p> <p>6 A. Let me further preface, I grew up on a farm. I've</p> <p>7 operated farm equipment. I've operated new equipment,</p> <p>8 old equipment, well-maintained, poorly-maintained</p> <p>9 equipment. So I have some experiential background in</p> <p>10 terms of operating farm equipment, and still family</p> <p>11 members participate in either operating equipment for</p> <p>12 gainful employment or in the service industry, where</p> <p>13 they're operating for service companies, or repair</p> <p>14 companies, or dealerships.</p> <p>15 Q. Where did you grow up?</p> <p>16 A. Nebraska.</p> <p>17 Q. Was there a particular type of farm that you gained</p> <p>18 your experience on, what type of crops, what type of</p> <p>19 livestock?</p> <p>20 A. Dry land farming, corn, soybeans, wheat, alfalfa;</p> <p>21 livestock, chickens, sheep, hogs, beef cattle.</p> <p>22 Q. Was your father a farmer?</p> <p>23 A. Yes.</p> <p>24 Q. How many acres, approximately, did he raise and farm?</p> <p>25 A. 240.</p>	<p style="text-align: right;">Page 27</p> <p>1 graduate school, since that time have you actively</p> <p>2 been involved in farming operations yourself?</p> <p>3 A. No.</p> <p>4 Q. And I understand that you may still have family</p> <p>5 members that operate farms and you've visited them,</p> <p>6 but have you helped or provided services on the farm</p> <p>7 when you visited?</p> <p>8 A. Yes.</p> <p>9 Q. Just generally, when's the last time you've done that</p> <p>10 type of activity?</p> <p>11 A. Ten years ago.</p> <p>12 Q. Do you own any farmland today?</p> <p>13 A. No.</p> <p>14 Q. Is it safe to say that you have not been involved in</p> <p>15 farming since the emission control design</p> <p>16 specifications have become more prevalent in the last</p> <p>17 five to ten years?</p> <p>18 A. Yes.</p> <p>19 Q. And when I talk about that, I'm talking about the SCR</p> <p>20 canister and the various tier levels of emission</p> <p>21 controls that the federal government is regulating.</p> <p>22 You have not been involved in farming since those have</p> <p>23 become part of the industry?</p> <p>24 A. Correct.</p> <p>25 Q. Where did you become employed after you graduated from</p>
<p style="text-align: right;">Page 26</p> <p>1 Q. I'm sure you already realize this, but a lot of</p> <p>2 families are green families or red families or blue</p> <p>3 families; they buy the same type of equipment. Did</p> <p>4 your family always buy the same type of farming</p> <p>5 equipment?</p> <p>6 A. Yes.</p> <p>7 Q. What was the manufacturer?</p> <p>8 A. Minneapolis Moline, the orange family.</p> <p>9 Q. I don't meet many Minneapolis Moline families. In</p> <p>10 your experience, have you ever had the opportunity to</p> <p>11 operate a Case piece of equipment?</p> <p>12 A. Yes.</p> <p>13 Q. Tractor, combine, do you recall?</p> <p>14 A. Tractor.</p> <p>15 Q. What about New Holland?</p> <p>16 A. No.</p> <p>17 Q. What about International Harvester?</p> <p>18 A. Yes.</p> <p>19 Q. Have you ever had personally any negative experiences</p> <p>20 that you recall from your youth pertaining to Case or</p> <p>21 New Holland?</p> <p>22 A. Not that I recall.</p> <p>23 Q. What about International Harvester?</p> <p>24 A. Not that I recall.</p> <p>25 Q. When you went to college and then, obviously, to</p>	<p style="text-align: right;">Page 28</p> <p>1 Washington University in 1983?</p> <p>2 A. I graduated from Washington University in 1978 and</p> <p>3 went into the workforce. My master's degree was a</p> <p>4 part-time study.</p> <p>5 Q. What were you doing in the workforce from 1978?</p> <p>6 A. I went to work for McDonnell Douglas Aircraft</p> <p>7 Corporation, now part of Boeing, in the non-metallics</p> <p>8 research laboratory, working on composite materials;</p> <p>9 graphite epoxy, fiberglass epoxy, sandwich panels,</p> <p>10 syntactic, S-Y-N-T-A-C-T-I-C, foam, radar-absorbing</p> <p>11 materials, principally for military aircraft and space</p> <p>12 shuttle components.</p> <p>13 Q. How long did you stay with McDonnell Douglas?</p> <p>14 A. I believe ten months.</p> <p>15 Q. And then where did you go after that?</p> <p>16 A. Then I moved to Wagner Electric, in St. Louis. They</p> <p>17 were a manufacturer of automotive brake components,</p> <p>18 both for OEM, passenger vehicles for Chrysler and Ford</p> <p>19 and heavy-duty trucks at International Harvester.</p> <p>20 Q. I see that you were with Wagner for approximately a</p> <p>21 year, '79 to '80, is that correct?</p> <p>22 A. A little over a year.</p> <p>23 Q. And then you went to Washington University Technology</p> <p>24 Associates as a CAD engineer?</p> <p>25 A. Correct.</p>

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<p style="text-align: right;">Page 29</p> <p>1 Q. What types of activities did you do with Washington 2 University Technology Associates? 3 A. I worked on some projects that were relating to 4 computer modeling, using an early finite element 5 analysis program, modeling structures, specifically 6 for the MX missile program, as well as doing failure 7 analysis of components, mechanical components relating 8 to engine failures. 9 Q. And then it looks like you went to a company called 10 Failure Analysts and Consulting Technical Services, 11 Inc., as a design engineering manager. What types of 12 activities were you doing with that company? 13 A. So the parent company, Washington University, divested 14 itself of the failure analysis aspect of the work and 15 was sold and purchased by a group of employees to 16 become failure analysts and consulting technical 17 services. 18 So I continued on in the computer-aided 19 design aspect, as well as failure analysis, under 20 their employ. Let me offer, at that employ I learned 21 my first valuable business lesson, which is don't go 22 into business with a crook -- 23 Q. Okay. 24 A. -- and shortly thereafter arranged my departure to 25 return to Washington University Technology Associates.</p>	<p style="text-align: right;">Page 31</p> <p>1 I removed the figure of Goddess of Liberty 2 from the Texas state capital building by helicopter. 3 We replicated it, placed the replica back on the 4 building, the original inside the building. 5 I have been inside of Freedom on the US 6 Capitol building. I did monumental restoration work 7 in Indianapolis, in Monument Circle, for a number of 8 things on the Soldiers and Sailors monument. I've 9 been in William Penn's head in Philadelphia. 10 So I've been a lot of different places, 11 again, coordinating, "Is this a structurally-sound 12 item? Do we have galvanic corrosion? Is it shifting? 13 Is it safe? Is it sound? Can the work be conducted 14 on-site or not?" 15 Around about that point, in 1993, once 16 again the parent company, Washington University, 17 decided the liability risk of working with 18 one-of-a-kind items that are irreparable and priceless 19 was too much of a hazard for them, and they offered 20 the company for sale to the employees once again. At 21 that point I decided I didn't want to be in this 22 business, wanted to do something different. The 23 particular job through Washington University required 24 quite a bit of travel. I was gone about 200 days a 25 year, which was unsatisfactory and spawned my</p>
<p style="text-align: right;">Page 30</p> <p>1 Q. And then you were with Washington University 2 Technology Associates until 1993, is that correct? 3 A. Yes. 4 Q. Same types of activities that you had been doing 5 previously, just in a more managerial role? 6 A. The activities changed slightly. So I still did small 7 failure analysis projects, but the focus of the 8 company then changed to monumental art restoration, 9 and I was the engineer responsible charge. 10 So we would work on objects, physical 11 objects ten feet tall or taller, ten feet off the 12 ground or higher. A portion of the employ was 13 involved in refinishing/refurbishing, and I was 14 involved in the structural valuation of the items; 15 logistics, getting equipment up on buildings, down 16 from buildings. 17 Examples would be we -- I, as the engineer 18 responsible charge, with the group removed three 19 figures from the old post office building in 20 St. Louis, approximately a hundred feet off the 21 ground, weighing between eighteen thousand pounds and 22 nine thousand pounds, carved in marble by Daniel 23 Chester French. We cleaned them, replicated them, 24 placed the replicas on the building, the originals 25 inside the building in a faux storefront arrangement.</p>	<p style="text-align: right;">Page 32</p> <p>1 departure. 2 Q. At that point you went to Meridian Medical 3 Technologies, also in St. Louis, is that correct? 4 A. Yes, correct. 5 Q. What was your role there? 6 A. I was research scientist, initially, working in the 7 R&D department for medical devices. We were working 8 with small, single-use, disposable parenteral 9 devices -- the EpiPen is the item that comes to 10 mind -- doing formulations in a clean room, operating 11 as a pharmaceutical scientist. 12 Q. Does that company have the patent on the EpiPen, on 13 the -- 14 A. Yes. They've been purchased by a number of different 15 companies. The patent is in expiry right now, but 16 they were the patent holder at the time. 17 Q. And then eventually you moved to Kalamazoo and started 18 working at Pfizer, as a senior principal scientist, 19 engineer. Is that correct? 20 A. Correct. 21 Q. What was your role at Pfizer? 22 A. I had a former director at Meridian Medical, in 23 St. Louis, who moved to Pharmacia at the time, now 24 Pfizer; he called me up one day and said, "Would you 25 like to have fun again? I have a project for you."</p>

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<p style="text-align: right;">Page 33</p> <p>1 So I moved up to Kalamazoo to work on single-use, 2 disposable medical devices for parenterals and for 3 ophthalmics, eye-related medication. So I worked with 4 a variety of concepts, outside vendors, machine 5 fabricators, to create assembly processes, functional 6 devices, prototyping devices, for operation and 7 behavior. 8 Q. And then eventually you left Pfizer to come to 9 Nederveld in approximately 2006, is that correct? 10 A. In 2005 Pfizer made a strategic decision to close 11 their research and development group in Kalamazoo and 12 unemployed five hundred people. 13 My work traveled to England. I traveled 14 with my equipment and my projects to train people and 15 worked over there for a six-week period. I would have 16 loved to work there, I can't stand to live there. So 17 I searched for another position in the local area and 18 discovered Nederveld. 19 Q. Has your time at Nederveld been pretty consistent, 20 doing the same types of activities, or has it changed 21 at different times? 22 A. It has quite a variety. 23 Q. I understand it has a variety, but was it in the 24 beginning you were investigating a particular type of 25 incident and then it shifted to another type of</p>	<p style="text-align: right;">Page 35</p> <p>1 licenses besides being a professional engineer? 2 A. No. 3 Q. Have you ever worked with Mr. Coretti before? 4 A. Yes. 5 Q. Approximately how many times? 6 A. A handful. 7 Q. Less than ten? 8 A. Less than ten. 9 Q. Less than five? 10 A. I don't recall. 11 Q. If you can open to your testifying experience, some of 12 these matters I can't tell if you were working with 13 Farm Bureau or not because the name of the insured, 14 the farmer, is listed in the name of the case. So, 15 basically, I just want to find out if Farm Bureau 16 hired you in each of these -- in certain of these 17 cases, okay? 18 So I'll just ask you first, the Yvonne 19 White case, was Farm Bureau involved in that case? 20 A. Where are you? 21 Q. October 2017. 22 A. No. 23 Q. The next case is State Farm and Casualty Company 24 versus Arbor Inspection Services. Was Farm Bureau 25 involved in that case?</p>
<p style="text-align: right;">Page 34</p> <p>1 incident more recently? 2 A. No. 3 Q. And your title has stayed the same the entire time? 4 A. Yes. 5 Q. I understand from your CV that you are a professional 6 engineer. In what states do you have a license? 7 A. I have a license in Missouri, a license in Michigan, 8 and a license in South Dakota. I've previously held 9 licenses in other states. 10 Q. Are you a certified fire investigator? 11 A. No. 12 Q. Have you ever attended any training seminars on 13 investigation of fires? 14 A. Yes. 15 Q. Have they been provided by a particular organization? 16 A. No. 17 Q. Have you ever attended a NFPA fire investigation 18 seminar training session? 19 A. No. 20 Q. Are you familiar with the phrase NFPA? 21 A. Yes. 22 Q. And when I say NFPA 921, are you familiar with that 23 publication? 24 A. Yes. 25 Q. Do you have any other types of certifications or</p>	<p style="text-align: right;">Page 36</p> <p>1 A. No. 2 Q. The Aurora versus Liberty Insurance Corporation case, 3 was Farm Bureau involved in that case? 4 A. No. 5 Q. And I see underneath that you served for Liberty in 6 that case. 7 The Andrade case, it says you served as an 8 expert for Allstate. So I assume Farm Bureau was not 9 involved in that case, correct? 10 A. Correct. 11 Q. The December 2016 case, which is Auto Club Insurance 12 versus -- actually, I don't see who -- oh, versus Home 13 Appliance Mart, Inc., were you involved on behalf of 14 Farm Bureau in that case? 15 A. No. 16 Q. The Mellor-McDowell versus Powers Trucking case, were 17 you involved on behalf of Farm Bureau on that case? 18 A. No. 19 Q. Nationwide Property and Casualty versus Duca, it says 20 you were an expert for Nationwide, so I can assume 21 Farm Bureau was not involved in that case, is that 22 correct? 23 A. Correct. 24 Q. But it does say that the Coretti Law Firm was 25 involved. So is that Mr. Coretti's firm?</p>

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<p style="text-align: right;">Page 37</p> <p>1 A. Yes.</p> <p>2 Q. The Pacemte versus Stephen Hunt and Pronto Freight</p> <p>3 Ways matter, was that a Farm Bureau matter?</p> <p>4 A. No.</p> <p>5 Q. Auto-Owners Insurance versus General Electric, it says</p> <p>6 you were an expert witness for Auto-Owners. So I</p> <p>7 assume Farm Bureau was not involved, is that correct?</p> <p>8 A. Correct.</p> <p>9 Q. Cincinnati Insurance versus Becker Ulman Construction,</p> <p>10 was Farm Bureau involved in that case?</p> <p>11 A. No.</p> <p>12 Q. Ross versus Carrier Corporation, it says you were an</p> <p>13 expert for Nationwide Mutual. So I assume that you</p> <p>14 were not hired by Farm Bureau, is that correct?</p> <p>15 A. Correct.</p> <p>16 Q. State Farm versus Freeport Supply Store, it says you</p> <p>17 were an expert witness for Freeport Supply Store. Was</p> <p>18 Farm Bureau involved in that case?</p> <p>19 A. No.</p> <p>20 Q. Lalone versus Riedstra Dairy, you were an expert for</p> <p>21 Riedstra Dairy. Did that case involve Farm Bureau?</p> <p>22 A. Not to my knowledge.</p> <p>23 Q. The 2011 case is Farm Bureau versus Patrick's</p> <p>24 Plumbing, and it says you were an expert for Farm</p> <p>25 Bureau. So you would agree that's a case where Farm</p>	<p style="text-align: right;">Page 39</p> <p>1 that involve, if you recall?</p> <p>2 A. I don't recall.</p> <p>3 Q. Parkside Landings versus Kent Power, Inc., you were an</p> <p>4 expert for Cincinnati Insurance. So I assume Farm</p> <p>5 Bureau was not involved?</p> <p>6 A. Correct.</p> <p>7 Q. October 2008, you were expert for Cincinnati Insurance</p> <p>8 in the Richard Wilson case. Farm Bureau was not</p> <p>9 involved, correct?</p> <p>10 A. Correct.</p> <p>11 Q. Dukes versus Goosens, was Farm Bureau involved in that</p> <p>12 case?</p> <p>13 A. No.</p> <p>14 Q. Allstate versus Forest Glen Mechanical, it says you</p> <p>15 were an expert for Allstate, so Farm Bureau was not</p> <p>16 involved, is that correct?</p> <p>17 A. Correct.</p> <p>18 Q. Mooney versus Howard was a trial in July 2013. Do you</p> <p>19 know if Farm Bureau was involved?</p> <p>20 A. They were not.</p> <p>21 Q. The next case is Haiderer, H-A-I-D-E-R-E-R, versus</p> <p>22 Nedean, N-E-D-E-A-U. It says you were hired as an</p> <p>23 expert for Farm Bureau, is that correct?</p> <p>24 A. Yes.</p> <p>25 Q. Then we have Whitney versus Allstate, which you were</p>
<p style="text-align: right;">Page 38</p> <p>1 Bureau hired you?</p> <p>2 A. Yes.</p> <p>3 Q. Go back to the Lalone versus Riedstra Dairy case. You</p> <p>4 said not to your knowledge, you don't know that Farm</p> <p>5 Bureau -- whether Farm Bureau was involved. Do you</p> <p>6 remember who you were hired by in that case?</p> <p>7 A. Straub Seaman & Allen.</p> <p>8 Q. So in those situations, the attorney just calls you</p> <p>9 directly and you're not sure if Farm Bureau's</p> <p>10 involved?</p> <p>11 A. The attorney calls us directly. There may be</p> <p>12 information that relates to the insurance company</p> <p>13 that's involved. In this specific case, I do not</p> <p>14 recall.</p> <p>15 Q. The reason I'm asking is, that case that we had with</p> <p>16 Riedstra Dairy, Farm Bureau was involved in that case,</p> <p>17 and it was about the same time, so I'm assuming, but</p> <p>18 if you don't recall --</p> <p>19 A. I don't recall.</p> <p>20 Q. Okay. June 2010, it says you were an expert for</p> <p>21 Indian Harbor Insurance Company in the Muskegon Fire</p> <p>22 Equipment case, but I assume that was not a Farm</p> <p>23 Bureau case?</p> <p>24 A. Correct.</p> <p>25 Q. What was the Muskegon Fire Equipment matter? What did</p>	<p style="text-align: right;">Page 40</p> <p>1 on behalf of Allstate. So Farm Bureau was not</p> <p>2 involved, is that correct?</p> <p>3 A. Correct.</p> <p>4 Q. And then the last two you were testifying on behalf of</p> <p>5 Auto-Owners Insurance, is that correct?</p> <p>6 A. Yes.</p> <p>7 Q. So Farm Bureau was not involved in either of those.</p> <p>8 Thank you. I know that's laborious,</p> <p>9 but ...</p> <p>10 I want to look at your report, if you can</p> <p>11 pull that out of -- this is Exhibit 23, and you've</p> <p>12 already told us that a colleague of yours is no longer</p> <p>13 with the company but helped in the investigation and</p> <p>14 the preparation of the opinions in this report, is</p> <p>15 that correct?</p> <p>16 A. Yes.</p> <p>17 Q. Are you comfortable to testify as to everything that</p> <p>18 is in the report yourself?</p> <p>19 A. Yes.</p> <p>20 Q. And, in particular, I'm asking, Dr. Smith and you</p> <p>21 collaborated on this report, so I assume there's</p> <p>22 certain information that Dr. Smith provided in</p> <p>23 preparation of the report and certain information that</p> <p>24 you provided. Is that correct?</p> <p>25 A. Correct.</p>

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<p style="text-align: right;">Page 41</p> <p>1 Q. The portions that he provided, he's not here to</p> <p>2 testify. Do you feel qualified and competent to offer</p> <p>3 those same opinions that he was providing to the</p> <p>4 report?</p> <p>5 A. No.</p> <p>6 Q. Okay. If we get to a particular place where you feel</p> <p>7 like a certain opinion is something from Dr. Smith,</p> <p>8 can you tell me where those opinions are?</p> <p>9 A. I believe so.</p> <p>10 Q. Okay. And, in particular, it looks like he is a</p> <p>11 certified fire investigator, he's a certified vehicle</p> <p>12 fire investigator, and he's also a master automotive</p> <p>13 technician. Those are certifications or</p> <p>14 qualifications that you don't possess, is that</p> <p>15 correct?</p> <p>16 A. Correct.</p> <p>17 Q. So as far as investigating the cause of the fire and</p> <p>18 certain aspects of the origin of the fire, are those</p> <p>19 areas that you would have to leave to others to offer</p> <p>20 those opinions?</p> <p>21 A. Yes.</p> <p>22 Q. As it pertains to this investigation, what was your</p> <p>23 role, what were you providing to this report, just in</p> <p>24 general?</p> <p>25 A. There was some general discussions with Dr. Smith in</p>	<p style="text-align: right;">Page 43</p> <p>1 where they would fall under his umbrella, feel free to</p> <p>2 let me know. That's what we need to know, is where</p> <p>3 your expertise starts and stops and where his starts</p> <p>4 and stops, okay?</p> <p>5 A. Yes.</p> <p>6 Q. Do you consider yourself an expert in fire cause and</p> <p>7 origin?</p> <p>8 A. No.</p> <p>9 Q. Do you consider yourself an expert in fire dynamics</p> <p>10 and how fires spread?</p> <p>11 A. No.</p> <p>12 Q. Do you consider yourself an expert in heat transfer</p> <p>13 from one side of a material to another?</p> <p>14 A. No.</p> <p>15 Q. Do you consider yourself an expert in ignition</p> <p>16 temperatures of particular types of materials?</p> <p>17 A. No.</p> <p>18 Q. Do you consider yourself an expert in the operation of</p> <p>19 farming equipment?</p> <p>20 A. I don't know that there's a qualification for expert</p> <p>21 farm equipment operator. I've never seen such a</p> <p>22 certification available.</p> <p>23 Q. I'm not necessarily --</p> <p>24 A. I do --</p> <p>25 Q. I'm sorry.</p>
<p style="text-align: right;">Page 42</p> <p>1 terms of the assignment. Oftentimes, as assignments</p> <p>2 occur in the office, we speak within generalities,</p> <p>3 "Yesterday I went to look at this, yesterday I saw</p> <p>4 this, generally." In drafting the report, there may</p> <p>5 have been some back and forth with Dr. Smith in terms</p> <p>6 of documentation relating to what's available to</p> <p>7 support the report.</p> <p>8 Upon Dr. Smith's departure, then I</p> <p>9 completed the report. So it would have been</p> <p>10 finalizing the report.</p> <p>11 Q. Was there a reason why the two of you collaborated on</p> <p>12 this investigation?</p> <p>13 A. Other than time and availability, not that I recall.</p> <p>14 Q. Did he have certain areas where he did not consider</p> <p>15 himself an expert and he needed your assistance to</p> <p>16 offer expertise in those areas?</p> <p>17 A. I don't believe so.</p> <p>18 Q. And then, vice versa, were there areas where he is an</p> <p>19 expert that you may not be, and you needed his</p> <p>20 assistance to offer opinions on those areas?</p> <p>21 A. His particular experience is certification in fire</p> <p>22 investigation, something that I do not have.</p> <p>23 Q. Without him to offer testimony -- well, as we go</p> <p>24 through the report, if there are areas or statements</p> <p>25 in the report that are related to fire investigation</p>	<p style="text-align: right;">Page 44</p> <p>1 A. I do consider myself a knowledgeable operator of the</p> <p>2 equipment and how it functions.</p> <p>3 Q. Do you consider yourself qualified to offer opinions</p> <p>4 as to the proper way to operate farming equipment in a</p> <p>5 safe and reasonable manner?</p> <p>6 A. I believe I would refer to the manufacturer's manual</p> <p>7 for that information.</p> <p>8 Q. Do you consider yourself an expert in the proper way</p> <p>9 to clean farming equipment?</p> <p>10 A. No.</p> <p>11 Q. I know you've had a lot of design -- well, let me</p> <p>12 rephrase.</p> <p>13 I know you've had a lot of engineering jobs</p> <p>14 over the past 35 years. Have you ever had an</p> <p>15 opportunity to design a piece of farming equipment?</p> <p>16 A. No.</p> <p>17 Q. Have you personally in your adult life ever performed</p> <p>18 mechanical or maintenance work on a piece of farming</p> <p>19 equipment?</p> <p>20 A. Yes.</p> <p>21 Q. In what context?</p> <p>22 A. Changing oil, lubrication, greasing, changing fuel</p> <p>23 filters, changing oil filters, making hydraulic hoses,</p> <p>24 replacing hydraulic cylinders on implements, wagons.</p> <p>25 General household cleaning, washing. Crude cleaning,</p>

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<p style="text-align: right;">Page 45</p> <p>1 scraping, removing debris entrapped within a piece of</p> <p>2 farm equipment.</p> <p>3 Q. And is that all as a visitor on a relative's farm,</p> <p>4 where you've been helping out?</p> <p>5 A. While in St. Louis, my daughter was a member of a</p> <p>6 mounted Girls Scout troop, and the parents were</p> <p>7 expected to maintain the farm equipment on the group</p> <p>8 farm as part and parcel of payment for the work. So</p> <p>9 they had hay equipment on the farm which we had to</p> <p>10 maintain and operate.</p> <p>11 Sadly, I grew up on a farm. Operating a</p> <p>12 hay baler's work, it's not fun. For the city boys it</p> <p>13 was fun. So they operated it, I maintained it.</p> <p>14 Q. Did you say mounted Girl Scouts?</p> <p>15 A. They rode horses.</p> <p>16 Q. I'd just never heard of that, so ...</p> <p>17 Have you studied the operating temperatures</p> <p>18 of T8.390 tractors?</p> <p>19 A. No.</p> <p>20 Q. Do you know how hot the exhaust can become during</p> <p>21 operation?</p> <p>22 A. Not from specific knowledge.</p> <p>23 Q. When you say that, do you mean you have general</p> <p>24 knowledge of how hot it can become?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 47</p> <p>1 A. Those are old.</p> <p>2 Q. Like sixties, seventies?</p> <p>3 A. Seventies.</p> <p>4 Q. And then the Generation II John Deeres, do you have</p> <p>5 any idea what years those would be?</p> <p>6 A. Those are late seventies.</p> <p>7 Q. But as far as whether the turbo on the T8.390 actually</p> <p>8 operates at a temperature to become red hot, you don't</p> <p>9 have knowledge?</p> <p>10 A. I don't have knowledge, specific knowledge.</p> <p>11 Q. And then as to other components of the exhaust system</p> <p>12 on the T8.390, you wouldn't know whether they operate</p> <p>13 red hot or not?</p> <p>14 A. I wouldn't know, but I doubt they do.</p> <p>15 Q. And, in fact, you don't know specific temperatures</p> <p>16 that those components of the entire exhaust system</p> <p>17 actually operate during full throttle?</p> <p>18 A. I do not.</p> <p>19 Q. Have you ever drafted warnings pertaining to the use</p> <p>20 of heavy equipment?</p> <p>21 A. No.</p> <p>22 Q. Do you consider yourself an expert in the drafting of</p> <p>23 warnings?</p> <p>24 A. No.</p> <p>25 Q. What about the drafting of safety instructions?</p>
<p style="text-align: right;">Page 46</p> <p>1 Q. And what is your general knowledge -- or let me</p> <p>2 rephrase.</p> <p>3 What's the basis of your general knowledge</p> <p>4 about how hot it can become?</p> <p>5 A. The surfaces of the exhaust system can glow red hot</p> <p>6 once operating, so obviously they're hot enough to</p> <p>7 burn human flesh, and if in contact with ignitable</p> <p>8 materials, they can start a fire.</p> <p>9 Q. Which particular components become hot, red hot during</p> <p>10 operation?</p> <p>11 A. During operation, the exhaust of the turbocharger, the</p> <p>12 exhaust for the turbocharger can glow red hot.</p> <p>13 Q. And is that from observation of a T8.390's operation?</p> <p>14 A. No.</p> <p>15 Q. And what is that from? Where have you learned that?</p> <p>16 A. Operation of a turbocharged tractor itself.</p> <p>17 Q. Okay, other models, not the T8.390?</p> <p>18 A. Correct.</p> <p>19 Q. What models have you seen operate with a turbocharger</p> <p>20 to see that it becomes red hot?</p> <p>21 A. Older models, like an International Harvester 1466,</p> <p>22 1066s, some John Deere Generation II models, older</p> <p>23 models.</p> <p>24 Q. The International Harvester, do you have any idea what</p> <p>25 years those would be? Those are pretty old, right?</p>	<p style="text-align: right;">Page 48</p> <p>1 A. No.</p> <p>2 Q. What about human factors?</p> <p>3 A. No.</p> <p>4 Q. And when I say "human factors," you're familiar with</p> <p>5 that phrase in the litigation context, is that</p> <p>6 correct?</p> <p>7 A. Yes.</p> <p>8 Q. So you don't consider yourself an expert in how</p> <p>9 operators will interpret certain warnings, is that</p> <p>10 correct?</p> <p>11 A. Correct.</p> <p>12 Q. And then how they actually will implement the</p> <p>13 instructions that they are given on a day-to-day</p> <p>14 basis, you wouldn't be an expert in that, either?</p> <p>15 A. Correct.</p> <p>16 Q. Have you personally seen the tractor that was involved</p> <p>17 in this fire before?</p> <p>18 A. No.</p> <p>19 Q. You didn't do a field inspection or an inspection of</p> <p>20 the unit following the fire?</p> <p>21 A. No.</p> <p>22 Q. Do you know if your colleague, Dr. Smith, did?</p> <p>23 A. Yes.</p> <p>24 Q. And are you relying, in part, on his observations at</p> <p>25 those inspections?</p>

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<p style="text-align: right;">Page 49</p> <p>1 A. Yes.</p> <p>2 Q. And would his observations be encapsulated in this</p> <p>3 report?</p> <p>4 A. Yes.</p> <p>5 Q. And to the extent that there are notes or memos</p> <p>6 drafted of his observations, those would be in the</p> <p>7 file that you're talking about?</p> <p>8 A. Correct.</p> <p>9 Q. Would he have sent you emails describing what he saw</p> <p>10 or his thoughts?</p> <p>11 A. No.</p> <p>12 Q. Was there a reason why Dr. Smith went to the site or</p> <p>13 the inspection of the unit and you did not?</p> <p>14 A. The assignment of our projects typically is a single</p> <p>15 individual acting as the investigator. So Dr. Smith's</p> <p>16 assignment would have been for the investigation. I</p> <p>17 would have been assigned elsewhere.</p> <p>18 So my assignment at the time of the</p> <p>19 investigation was something other than follow</p> <p>20 Dr. Smith.</p> <p>21 Q. So what was your role in the entire project from the</p> <p>22 beginning?</p> <p>23 A. My role in the beginning was nothing. My role in the</p> <p>24 beginning was this was an assignment to Dr. Smith. So</p> <p>25 my involvement came as Dr. Smith was departing.</p>	<p style="text-align: right;">Page 51</p> <p>1 A. Yes.</p> <p>2 Q. Is there a particular reason why you picked it up as</p> <p>3 opposed to someone else?</p> <p>4 A. I'm very good.</p> <p>5 Q. Okay. Was it in your area of expertise, or was there</p> <p>6 some reason why this one happened to fall to you,</p> <p>7 other than you being good?</p> <p>8 A. I believe from my particular background of farming</p> <p>9 equipment, both in investigations here at Nederveld</p> <p>10 and prior personal experience, it may have been</p> <p>11 slotted for me.</p> <p>12 Q. So you haven't seen the tractor individually. Have</p> <p>13 you been to the location of where the tractor fire</p> <p>14 occurred?</p> <p>15 A. No.</p> <p>16 Q. Have you spoken with any of the witnesses to the fire?</p> <p>17 A. No.</p> <p>18 Q. When you became involved in June of 2018, what was</p> <p>19 your first task that you undertook?</p> <p>20 A. To make arrangements to meet with Dr. Smith and review</p> <p>21 the status of the project, the report in progress, and</p> <p>22 what needed to be completed to issue a final report.</p> <p>23 Q. How did you go about getting a download from Dr. Smith</p> <p>24 of all the information that he had already gained in</p> <p>25 his investigation?</p>
<p style="text-align: right;">Page 50</p> <p>1 Q. Okay, and that clarifies a lot. I thought you were</p> <p>2 all working together the whole time, but it sounds</p> <p>3 like you're saying that you only became involved when</p> <p>4 Dr. Smith announced that he was departing, is that</p> <p>5 correct?</p> <p>6 A. Correct.</p> <p>7 Q. Okay. When did you first hear about this fire and</p> <p>8 become involved?</p> <p>9 A. First heard about the fire would have been</p> <p>10 contemporary to the general assignment, again, because</p> <p>11 there's office banter, "Hey, we have a project</p> <p>12 involving whatever." So my recollection is hazy at</p> <p>13 that point in time, but, "Dr. Smith's going to</p> <p>14 investigate a tractor fire." That would have been my</p> <p>15 first general knowledge of it.</p> <p>16 Specific involvement, then, would have</p> <p>17 fallen into June of 2018.</p> <p>18 Q. So the report is drafted July 19th, 2018, and your</p> <p>19 involvement would have begun a month before that?</p> <p>20 A. Roughly.</p> <p>21 Q. So by June of 2018, Dr. Smith announced that he was</p> <p>22 leaving the company, and somebody needed to pick up</p> <p>23 the file?</p> <p>24 A. Yes.</p> <p>25 Q. And that person happened to be you?</p>	<p style="text-align: right;">Page 52</p> <p>1 A. A combination of reviewing the file, some of the</p> <p>2 photographs in the file, and speaking with Dr. Smith.</p> <p>3 Q. And, for instance, when lawyers leave firms, they</p> <p>4 often draft a memo showing the status of the case,</p> <p>5 action items that are coming up, and they leave that</p> <p>6 for whoever will take the file after they depart.</p> <p>7 Was there any type of memo that was drafted</p> <p>8 in this case?</p> <p>9 A. Yes.</p> <p>10 Q. Is that memo separate from the report that I have?</p> <p>11 A. Yes.</p> <p>12 Q. And do you have a copy of that memo with you?</p> <p>13 A. Yes.</p> <p>14 Q. Is that something that you can print for us?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. The materials that you have collected and</p> <p>17 provided here today, did you compile those or did</p> <p>18 Dr. Smith compile those?</p> <p>19 A. We both compiled them.</p> <p>20 Q. Was there a particular area of research or</p> <p>21 investigation you wanted to do once you became</p> <p>22 involved that you felt was necessary to finalize this</p> <p>23 report?</p> <p>24 A. No.</p> <p>25 Q. And, for instance, there are several secondary sources</p>

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<p style="text-align: right;">Page 53</p> <p>1 such as the Manufacturers of Emission Controls</p> <p>2 Association report, the Babrauskas excerpt, and then</p> <p>3 there's an article, I think it's by Schaffer. Do you</p> <p>4 recall who identified those and pulled those</p> <p>5 documents?</p> <p>6 A. Dr. Smith may have identified them, I may have pulled</p> <p>7 them.</p> <p>8 Q. I believe you testified that you have not reviewed any</p> <p>9 deposition transcripts from this case. Is that</p> <p>10 correct?</p> <p>11 A. Yes.</p> <p>12 Q. Have you reviewed any interview statements or recorded</p> <p>13 interviews of witnesses from this case?</p> <p>14 A. Yes, those as provided in Mr. Wilson's report.</p> <p>15 Q. Okay. And I believe the one that is provided was from</p> <p>16 an individual named Jake Schot. Is that familiar to</p> <p>17 you?</p> <p>18 A. Yes.</p> <p>19 Q. Do you know if you've reviewed any other recorded</p> <p>20 statements of interviews?</p> <p>21 A. No.</p> <p>22 Q. And Mr. Wilson refers to a conversation that he had</p> <p>23 with the operator, whose name is Alfredo Barnal. Have</p> <p>24 you reviewed Mr. Wilson's notes and report related to</p> <p>25 that interview with Mr. Barnal?</p>	<p style="text-align: right;">Page 55</p> <p>1 A. I do not.</p> <p>2 Q. Approximately how much time did you prepare -- let me</p> <p>3 rephrase that.</p> <p>4 How much time did you spend looking at</p> <p>5 these file materials and gathering your thoughts</p> <p>6 before this report was drafted?</p> <p>7 A. Zero, because the report was drafted before I assumed</p> <p>8 the project.</p> <p>9 Q. So once you became involved, you were just finalizing</p> <p>10 the report, is that correct?</p> <p>11 A. Correct.</p> <p>12 Q. Did you add any particular sections to the report?</p> <p>13 A. Yes.</p> <p>14 Q. In general, can you tell me which sections you added?</p> <p>15 A. On page 3, top of the page, second paragraph,</p> <p>16 regarding the technical feasibility and production</p> <p>17 practice for manufacturing, that particular paragraph</p> <p>18 was my insertion.</p> <p>19 Q. Is it fair to say that the rest of the report,</p> <p>20 although you may have edited and tweaked things, it</p> <p>21 was the work product of Dr. Smith?</p> <p>22 A. Yes.</p> <p>23 Q. Do you agree with the remainder of the opinions and</p> <p>24 the conclusions that are reached in the rest of the</p> <p>25 report?</p>
<p style="text-align: right;">Page 54</p> <p>1 A. Yes.</p> <p>2 Q. Do you know if there's a recorded version of that</p> <p>3 anywhere?</p> <p>4 A. I do not know.</p> <p>5 Q. You haven't seen one?</p> <p>6 A. I have not seen one.</p> <p>7 Q. All of the photographs that are in the Nederveld file</p> <p>8 were taken by Dr. Smith, is that correct?</p> <p>9 A. Photographs in the Nederveld file would have been</p> <p>10 taken by Dr. Smith or provided by Mr. Wilson for our</p> <p>11 reference, and they would have been identified as</p> <p>12 such.</p> <p>13 Q. Do you know if Dr. Smith has interviewed or talked</p> <p>14 with any witnesses in this case?</p> <p>15 A. To my knowledge, he has not.</p> <p>16 Q. I understand that he did inspect the unit, is that</p> <p>17 correct?</p> <p>18 A. Yes.</p> <p>19 Q. Do you know of any other activities that he undertook</p> <p>20 in his investigation before he departed?</p> <p>21 A. I do not know.</p> <p>22 Q. I assume he spoke with Mr. Wilson?</p> <p>23 A. I assume so.</p> <p>24 Q. You don't know of any detailed conversation they've</p> <p>25 had about this case?</p>	<p style="text-align: right;">Page 56</p> <p>1 A. Yes.</p> <p>2 Q. Have you reviewed any document production that CNH has</p> <p>3 provided in this case?</p> <p>4 A. No.</p> <p>5 Q. Have you requested any of the information that CNH has</p> <p>6 provided in this case?</p> <p>7 A. No.</p> <p>8 Q. Is there anything that you have asked to look at that</p> <p>9 you haven't had an opportunity to look at?</p> <p>10 A. No.</p> <p>11 Q. Is there anything that you need to do to complete your</p> <p>12 opinions in this case?</p> <p>13 A. No.</p> <p>14 Q. So as they are in this report, they are complete, is</p> <p>15 that correct?</p> <p>16 A. Yes.</p> <p>17 Q. No further investigation needed, is that correct?</p> <p>18 A. Not at this time.</p> <p>19 Q. Farm Bureau has identified Mr. Wilson to offer</p> <p>20 opinions on the origin and cause of this fire. You're</p> <p>21 aware of that?</p> <p>22 A. That's my understanding.</p> <p>23 Q. What is Nederveld's role in complementing the opinions</p> <p>24 of Mr. Wilson?</p> <p>25 A. My understanding would be that as a fire investigator,</p>

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<p style="text-align: right;">Page 57</p> <p>1 specifically, they may not have the skill, knowledge, 2 experience, or certification to offer opinions on 3 mechanical items, assemblies, or vehicles, and that 4 would be the area in which Nederveld, or specifically 5 Dr. Smith, offered to augment Mr. Wilson's 6 investigation. 7 Q. And you've read Mr. Wilson's report, correct? 8 A. Yes. 9 Q. And we can agree that Mr. Wilson offers opinions about 10 where the fire started, but he also offers opinions 11 about why the fire or how the fire started. Is that 12 correct? 13 A. Yes. 14 Q. So what is Nederveld providing in addition to what 15 Mr. Wilson's already provided? 16 A. Nederveld carried the investigation forward separately 17 to generally agree with the origin of the fire and the 18 location of the vehicle from Dr. Smith's 19 investigation. 20 Further, reviewed documents whether this is 21 a possibility or probability for something to ignite 22 or catch fire within this particular area. That would 23 be review of the research documents, Babrauskas's 24 Ignition Manual, and other topics about ignition of 25 cellulosic materials.</p>	<p style="text-align: right;">Page 59</p> <p>1 Q. In other words, it would be inappropriate to reach a 2 conclusion without first gathering facts and 3 evaluating all of the facts that are available, 4 correct? 5 A. Forming a hypothesis, testing the hypothesis, yes. 6 Q. Yeah. So identify a question or an issue, gather 7 facts on that issue, form a hypothesis, test the 8 hypothesis, then reach a conclusion, correct? 9 A. Yes. 10 Q. And, in fact, if you start off with a conclusion in 11 mind, that can affect your entire investigation and 12 would be inappropriate, is that right? 13 A. Yes. 14 Q. Do you agree that NFPA 921 is the preeminent guide for 15 fire investigations in the United States? 16 A. I agree it's a guide. 17 Q. Do you know if it is the one that is generally 18 followed by the industry, or do you have an idea of 19 that? 20 A. I agree it's generally followed in the fire 21 investigation industry. 22 Q. Do you feel that it is -- do you have any criticisms 23 of NFPA 921? 24 A. No. 25 Q. Do you agree that a fire cause and origin expert</p>
<p style="text-align: right;">Page 58</p> <p>1 Finally, the further research that the 2 configuration of the T8 tractor was altered in the 3 series to remove the configuration which appeared to 4 contain an entrapped crop debris to form a fire 5 hazard, to remove that from the assembly. 6 Q. Okay. So it sounds like a portion of Nederveld was to 7 confirm Mr. Wilson's opinions, is that correct? 8 A. Yes. 9 Q. And then Nederveld went further in evaluating design 10 choices or design issues that may exist in this model 11 and other model tractors, is that correct? 12 A. Yes. 13 Q. So will you -- and we can get into the details, but 14 will you be offering an opinion as to a reasonable 15 alternative design that CNH should have followed? 16 A. Yes. 17 Q. And that's something you feel comfortable offering, 18 without reliance on Dr. Smith for his expertise? 19 A. Yes. 20 Q. Would you agree that any expert should follow the 21 scientific method in reaching conclusions? 22 A. Can you repeat the question? 23 Q. Sure. Would you agree that any expert should follow 24 the scientific method in reaching conclusions? 25 A. Yes.</p>	<p style="text-align: right;">Page 60</p> <p>1 should eliminate other potential causes of a fire 2 before reaching a conclusion as to a cause of a fire? 3 A. Yes. 4 Q. And the inability to eliminate other potential causes 5 means that a conclusion is invalid? 6 A. Yes. 7 Q. Isn't it true that there are a variety of reasons why 8 fires can occur other than defects in a piece of 9 equipment? 10 A. Yes. 11 Q. So, for instance, you can have a lightning strike or a 12 cigarette butt or spontaneous combustion, is that 13 right? 14 A. Yes. 15 Q. And you can also have a defect that might exist that 16 could cause a fire, is that fair? 17 A. Yes. 18 Q. Are you familiar with the phrase negative corpus? 19 A. Yes. 20 Q. What does that mean to you? 21 A. If you can prove everything but something occurred, so 22 in the absence of that one thing you cannot prove, 23 you're trying to establish a conclusion. 24 Q. Let me make sure I understand. So if you have four 25 potential causes of a fire, the elimination of the</p>

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<p style="text-align: right;">Page 61</p> <p>1 first three doesn't mean the fourth one caused the</p> <p>2 fire, is that correct?</p> <p>3 A. Correct.</p> <p>4 Q. And concluding that the fourth one caused the fire</p> <p>5 based on the elimination of the other three would be</p> <p>6 inappropriate. Is that correct?</p> <p>7 A. Correct.</p> <p>8 Q. That's an example of not following the scientific</p> <p>9 method, correct?</p> <p>10 A. Yes.</p> <p>11 Q. We talked about other potential causes of a fire</p> <p>12 besides a defect. So we can agree that just because a</p> <p>13 fire occurs doesn't mean that the product is</p> <p>14 defective, is that true?</p> <p>15 A. Correct.</p> <p>16 Q. In your experience with heavy equipment, and</p> <p>17 particularly farming equipment, isn't it true that hot</p> <p>18 components are inherent in combustion engines on heavy</p> <p>19 equipment?</p> <p>20 A. Yes.</p> <p>21 Q. And no matter who the manufacturer is, with farming</p> <p>22 equipment, specifically mechanized farming equipment,</p> <p>23 there will be hot components?</p> <p>24 A. Yes.</p> <p>25 Q. And you mentioned earlier the turbo is in a particular</p>	<p style="text-align: right;">Page 63</p> <p>1 or warned.</p> <p>2 Did I answer your question?</p> <p>3 Q. You did, yes, very thoroughly.</p> <p>4 Do you know if it is possible to design a</p> <p>5 tractor such as a T8.390 in a way such that debris</p> <p>6 does not come into contact with the turbo?</p> <p>7 A. Yes, it never moves.</p> <p>8 Q. Well, the turbo doesn't move but the debris can move</p> <p>9 in the air, is that correct?</p> <p>10 A. If the vehicle never moves, it never accumulates</p> <p>11 debris.</p> <p>12 Q. Oh, okay, I understand. If the vehicle never moves,</p> <p>13 that's a way, but in the normal operation of farming</p> <p>14 equipment that's moving in the field and creating</p> <p>15 debris and chaff, is it possible to prevent one</p> <p>16 hundred percent debris from coming into contact with</p> <p>17 the turbo?</p> <p>18 A. I don't know.</p> <p>19 Q. You mentioned that it is a feature of mechanized</p> <p>20 farming, regardless of the manufacturer, that embers</p> <p>21 can come into contact with the turbo, is that correct?</p> <p>22 A. Combustible debris coming in contact with a turbo</p> <p>23 would create embers.</p> <p>24 Q. I'm sorry, I said that backwards. You agree that</p> <p>25 regardless of the manufacturer, debris can come into</p>
<p style="text-align: right;">Page 62</p> <p>1 area that gets very hot during operation. Have you</p> <p>2 ever seen a piece of debris or dust, a hot ember</p> <p>3 ignite from contact with a turbo?</p> <p>4 A. Yes.</p> <p>5 Q. Is that something that happens regardless of the</p> <p>6 manufacturer of farming equipment?</p> <p>7 A. Yes.</p> <p>8 Q. In your opinion, is that something that can be</p> <p>9 eliminated through design issues, or is it just</p> <p>10 inherent in mechanized farming?</p> <p>11 A. The presence of a hazard can be recognized in the</p> <p>12 design evaluation and oftentimes is studied through</p> <p>13 failure mode effect analysis, and based upon the</p> <p>14 approach from an FMEA, if there's a way to design</p> <p>15 around this particular risk or hazard that's offered,</p> <p>16 if there's a way to shield or guard it from occurring,</p> <p>17 that's developed.</p> <p>18 If there's no other means to correct that,</p> <p>19 then it's left as is, with some sort of understanding,</p> <p>20 warning, or notation.</p> <p>21 So if there's no way to eliminate the heat</p> <p>22 generated from the turbocharger, there may be a way to</p> <p>23 minimize or eliminate the potential of combustible</p> <p>24 material coming in contact with that surface. If the</p> <p>25 hazard cannot be eliminated, it is protected, guarded,</p>	<p style="text-align: right;">Page 64</p> <p>1 contact with the turbo and create embers from that</p> <p>2 contact?</p> <p>3 A. That's a possibility.</p> <p>4 Q. Is that something that you feel like only exists on</p> <p>5 Case New Holland tractors but doesn't exist on other</p> <p>6 model or manufacturers's tractors?</p> <p>7 A. No.</p> <p>8 Q. It's something that's ubiquitous in the industry, is</p> <p>9 that fair?</p> <p>10 A. Can you repeat the question, for "ubiquitous in the</p> <p>11 industry"?</p> <p>12 Q. Sure, I'll rephrase it.</p> <p>13 The presence of embers that are ignited</p> <p>14 from contact between debris and the turbo is a feature</p> <p>15 of mechanized farming that does not depend on the</p> <p>16 manufacturer of the equipment.</p> <p>17 A. Embers coming from the turbo are not a feature of the</p> <p>18 equipment. The equipment may be designed or arranged</p> <p>19 in a fashion to preclude or eliminate that condition</p> <p>20 from occurring, but it's not a hundred percent surety.</p> <p>21 Q. And you're unaware of any manufacturers that are able</p> <p>22 to one hundred percent eliminate that contact?</p> <p>23 A. I'm not aware.</p> <p>24 Q. You mentioned that if there's a potential hazard that</p> <p>25 cannot be eliminated one hundred percent, then the</p>

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<p style="text-align: right;">Page 65</p> <p>1 appropriate response of a manufacturer is to provide</p> <p>2 sufficient warnings?</p> <p>3 A. Yes.</p> <p>4 Q. And in the case of an ember that is created by contact</p> <p>5 between the debris and the turbo, the warning would be</p> <p>6 to make sure that you clean all the debris off your</p> <p>7 tractor, is that right?</p> <p>8 A. That's fair.</p> <p>9 Q. Because an ember doesn't cause a problem unless it</p> <p>10 finds a fuel source to ignite, is that correct?</p> <p>11 A. Yes.</p> <p>12 Q. And debris, crop debris can create a fuel source on a</p> <p>13 tractor?</p> <p>14 A. Yes.</p> <p>15 Q. And it's the operator's responsibility to remove that</p> <p>16 debris from the tractor?</p> <p>17 A. Yes.</p> <p>18 Q. The failure to remove debris can create a fire hazard,</p> <p>19 can't it?</p> <p>20 A. Yes.</p> <p>21 Q. Do you agree that the operator, at a minimum, should</p> <p>22 follow the operator's instructions on cleaning?</p> <p>23 A. I agree that the operator of the equipment should</p> <p>24 follow the information in the operator's manual for</p> <p>25 cleaning the equipment.</p>	<p style="text-align: right;">Page 67</p> <p>1 confirm that same opinion. Is that correct?</p> <p>2 A. Yes.</p> <p>3 Q. Mr. Wilson's opinion is that the fire in this</p> <p>4 particular case started because of an accumulation of</p> <p>5 crop debris next to an SCR canister that ignited due</p> <p>6 to hot-surface ignition. Is that correct?</p> <p>7 A. Yes.</p> <p>8 Q. And is that consistent with Nederveld's conclusion as</p> <p>9 to the cause and the origin of this fire?</p> <p>10 A. Yes.</p> <p>11 Q. Would you agree that for any particular material, in</p> <p>12 this case corn debris, that material has a temperature</p> <p>13 at which it will ignite if it's in contact with a hot</p> <p>14 surface?</p> <p>15 A. Yes.</p> <p>16 Q. And what do you call that temperature, what's the name</p> <p>17 you call that?</p> <p>18 A. Ignition temperature.</p> <p>19 Q. So ignition temperature of crop debris. Do you know</p> <p>20 what type of crop material was accumulated next to the</p> <p>21 SCR canister in this case?</p> <p>22 A. No.</p> <p>23 Q. Does that matter to your analysis of whether the</p> <p>24 SCR canister could in fact provide enough heat to</p> <p>25 ignite the crop material?</p>
<p style="text-align: right;">Page 66</p> <p>1 Q. And the first thing they'll need to do is actually</p> <p>2 read the manual in order to know what the manual</p> <p>3 requires, is that correct?</p> <p>4 A. Correct.</p> <p>5 Q. Do you believe that it would be unsafe for an operator</p> <p>6 to operate a piece of equipment without having read</p> <p>7 the manual?</p> <p>8 A. I believe so.</p> <p>9 Q. And do you believe it is the owner of the equipment,</p> <p>10 the boss's responsibility to also make sure that</p> <p>11 employees read the manual before operating equipment?</p> <p>12 A. I would agree.</p> <p>13 Q. Do you believe that's almost a basic OSHA requirement</p> <p>14 that applies to any type of equipment?</p> <p>15 A. Yes.</p> <p>16 MR. ROBINSON: We'll take a break. We're</p> <p>17 off the record.</p> <p>18 (Off the record at 10:55 a.m.)</p> <p>19 (Back on the record at 11:11 a.m.)</p> <p>20 MR. ROBINSON: Okay, we're back on the</p> <p>21 record.</p> <p>22 BY MR. ROBINSON:</p> <p>23 Q. I want to talk for a minute about Bill Wilson's</p> <p>24 opinion as to the origin and then cause, and then I</p> <p>25 understand that Nederveld also did an investigation to</p>	<p style="text-align: right;">Page 68</p> <p>1 A. No, because most crop material is cellulosic in</p> <p>2 nature, so it's in a family of materials that would</p> <p>3 ignite.</p> <p>4 Q. In that family, is there a range of temperatures at</p> <p>5 which it will ignite?</p> <p>6 A. Yes.</p> <p>7 Q. So, for instance, do you know whether certain crops</p> <p>8 are at the lower end of that family and other crops</p> <p>9 are at the high end of that family?</p> <p>10 A. Characteristically, yes. Categorically, no.</p> <p>11 Q. Okay. Characteristically, what would be at the lower</p> <p>12 end of that family of materials?</p> <p>13 A. Fine powdery material, chaff, wheat straw, things of</p> <p>14 that nature. Heavier material would be more</p> <p>15 root-related material, more densely-packed material.</p> <p>16 Denser material would be harder to ignite.</p> <p>17 Q. Did you say "root-related"?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. So where does corn debris fall into that</p> <p>20 family, in your opinion?</p> <p>21 A. Both ends.</p> <p>22 Q. Okay. So corn itself, the corn kernels, may be at one</p> <p>23 location in the family, but if we're talking about the</p> <p>24 chaff of the corn stalk and the corn leaves, if you</p> <p>25 don't -- let's call them leaves, where would those</p>

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<p style="text-align: right;">Page 69</p> <p>1 type of materials fall?</p> <p>2 A. They fall at the lesser ignition temperature.</p> <p>3 Q. So they'd have the lower end of that range?</p> <p>4 A. Yes.</p> <p>5 Q. Would you agree that for a surface to ignite material</p> <p>6 due to contact, the hot surface has to have a</p> <p>7 temperature that exceeds the ignition point of the</p> <p>8 material?</p> <p>9 A. Can you repeat the question?</p> <p>10 Q. Sure. In order for a hot surface to actually ignite</p> <p>11 debris, would you agree that the hot surface has to</p> <p>12 reach a temperature that's in excess of the ignition</p> <p>13 temperature of the debris?</p> <p>14 A. No.</p> <p>15 Q. Okay, why not?</p> <p>16 A. You can have ignition from radiant heat, so it doesn't</p> <p>17 have to touch the surface, and that radiant heat</p> <p>18 accumulates. So very much like focusing a magnifying</p> <p>19 glass on a surface, the temperature around it remains</p> <p>20 at room temperature, but that focus of radiant energy</p> <p>21 accumulates to the point of ignition.</p> <p>22 So that would be a non-contact ignition</p> <p>23 from radiant heat.</p> <p>24 Q. So if the surface, the skin temperature of a</p> <p>25 particular material reaches, let's just say X degrees,</p>	<p style="text-align: right;">Page 71</p> <p>1 receiving radiant heat. A sponge; so I have water</p> <p>2 attacking the sponge. The sponge can reach the point</p> <p>3 where it's saturated and can't hold any more. That's</p> <p>4 what I would call combustion.</p> <p>5 So because of this radiant effect, you can</p> <p>6 have something that ignites where it's not in direct</p> <p>7 contact with that surface.</p> <p>8 Q. So it will cause the temperature in that pocket to --</p> <p>9 A. To elevate, because you're always adding energy to</p> <p>10 that pocket.</p> <p>11 Q. Wouldn't that also cause the surface to become higher</p> <p>12 in temperature, as well?</p> <p>13 A. Which surface?</p> <p>14 Q. The surface --</p> <p>15 A. The receiving surface?</p> <p>16 Q. -- that's radiating -- no, the providing or the</p> <p>17 radiating surface. If the energy -- for instance, in</p> <p>18 this case we have an SCR canister, and it is emitting</p> <p>19 heat or radiating heat, correct?</p> <p>20 A. Correct.</p> <p>21 Q. And if that heat cannot dissipate in the immediate</p> <p>22 area around the SCR canister, wouldn't that also heat</p> <p>23 up and cause the surface of the SCR canister to reach</p> <p>24 a higher temperature?</p> <p>25 A. It could.</p>
<p style="text-align: right;">Page 70</p> <p>1 is it possible for the radiant temperature in the area</p> <p>2 to be higher than the X temperature of the surface?</p> <p>3 A. Yes.</p> <p>4 Q. Okay, in what context, or what would cause that to</p> <p>5 occur?</p> <p>6 A. So in the radiant heat, what happens is you're</p> <p>7 applying energy to a surface, and that energy</p> <p>8 accumulates until it dissipates, and it can dissipate</p> <p>9 by conduction, by convection, by radiation itself.</p> <p>10 Radiation is a poor means of removing heat.</p> <p>11 So if I have something that is near in proximity to</p> <p>12 this surface, and it's receiving radiant heat and it's</p> <p>13 insulated, it will form a combustion pocket.</p> <p>14 Q. And what do you mean by a "combustion pocket"?</p> <p>15 A. The area around it is compacted and insulated, such</p> <p>16 that the energy is focused in a particular area and</p> <p>17 cannot relieve itself.</p> <p>18 Does that make sense to you?</p> <p>19 Q. It does. And so I guess I'm hearing you say that</p> <p>20 because the energy --</p> <p>21 A. What happens is the surface is releasing energy. It</p> <p>22 has a surface temperature, let's say 500 degrees F,</p> <p>23 okay? It's also radiating heat as part of its heat</p> <p>24 loss, heat transfer, okay? So in that particular</p> <p>25 case, what you can do is you can have a surface that's</p>	<p style="text-align: right;">Page 72</p> <p>1 Q. And so do you still believe that in the context of the</p> <p>2 gap, a one-inch gap around an SCR canister, do you</p> <p>3 believe that the debris on the outside of the canister</p> <p>4 would reach temperatures higher than the surface of</p> <p>5 the SCR canister?</p> <p>6 A. It could.</p> <p>7 Q. Through the radiating process?</p> <p>8 A. Through heat transfer, where the radiant heat flux</p> <p>9 overwhelms the ability for that debris to relieve</p> <p>10 itself either through conduction, convection, or</p> <p>11 radiation itself.</p> <p>12 Q. Now, you mentioned a magnifying glass as an example,</p> <p>13 but that's a little different, right, because it's</p> <p>14 bringing heat and it's pinpointing it into a</p> <p>15 particular location, right?</p> <p>16 A. Not entirely, because what I'm offering with the</p> <p>17 magnifying glass is everything around there is at</p> <p>18 temperature, is at room temperature, and the radiant</p> <p>19 flux through that area is at room temperature. All</p> <p>20 I'm doing is focusing that. So I'm causing an</p> <p>21 acceleration of the event, okay?</p> <p>22 Q. You're focusing the --</p> <p>23 A. The energy.</p> <p>24 Q. -- the flux that goes through the glass --</p> <p>25 A. Correct.</p>

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<p style="text-align: right;">Page 73</p> <p>1 Q. -- into a particular --</p> <p>2 A. Point.</p> <p>3 Q. A smaller point than the surface area of the glass?</p> <p>4 A. Correct. So I'm overwhelming the ability of that</p> <p>5 point to relieve itself of energy.</p> <p>6 Q. And in the context of an SCR canister, is there any</p> <p>7 design feature that you're aware of on the T8.390 that</p> <p>8 actually focuses a broader flux into a more narrow</p> <p>9 surface area?</p> <p>10 A. No.</p> <p>11 Q. So the design of the SCR canister on the T8.390 does</p> <p>12 not direct all the heat to a particular place?</p> <p>13 A. Correct.</p> <p>14 Q. If the debris is going to reach a higher temperature</p> <p>15 than the surface of the canister, it's due to the</p> <p>16 inability to dissipate the heat because of insulation?</p> <p>17 A. Correct.</p> <p>18 Q. You'd agree that just because a fire occurs in a</p> <p>19 particular place does not mean that the fire is the</p> <p>20 result of hot-surface ignition, correct?</p> <p>21 A. Correct.</p> <p>22 Q. For instance, in this case, if the fire in fact did</p> <p>23 start and originated next to the SCR, that fact alone</p> <p>24 does not establish that the SCR caused the fire</p> <p>25 through hot-surface ignition?</p>	<p style="text-align: right;">Page 75</p> <p>1 that right?</p> <p>2 A. That's a possibility.</p> <p>3 Q. You could have somebody dropping a cigarette butt</p> <p>4 along the side of the tractor that could cause that</p> <p>5 fire?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. So if the only evidence we have of the cause of</p> <p>8 the fire is that it started next to the SCR, can we</p> <p>9 agree that that evidence alone does not establish that</p> <p>10 heat from the SCR ignited the debris either through</p> <p>11 contact or through radiant heat?</p> <p>12 A. In only that context, yes.</p> <p>13 Q. Do you consider yourself an expert in evaluating and</p> <p>14 reaching conclusions based on burn patterns?</p> <p>15 A. No.</p> <p>16 Q. Are you familiar with burn patterns? Do you see them</p> <p>17 in other cases?</p> <p>18 A. Yes.</p> <p>19 Q. If there is a V burn pattern, does that tell you</p> <p>20 anything?</p> <p>21 A. Oftentimes, V patterns are used by fire investigators</p> <p>22 to locate an origin.</p> <p>23 Q. But as far as interpreting those V patterns, you would</p> <p>24 leave that to others?</p> <p>25 A. That's correct.</p>
<p style="text-align: right;">Page 74</p> <p>1 A. Can you repeat the question?</p> <p>2 Q. If in fact the fire did originate next to the SCR,</p> <p>3 that fact alone does not demonstrate that the hot</p> <p>4 surface of the SCR canister ignited the fire?</p> <p>5 A. Correct.</p> <p>6 Q. You still have to have evidence that the temperature</p> <p>7 transfer from the canister caused the debris to</p> <p>8 ignite?</p> <p>9 A. Correct, in the absence of contact.</p> <p>10 Q. How does it change if they're in contact?</p> <p>11 A. The question you're posing is that just because we</p> <p>12 have a fire next to the SCR doesn't mean that we had</p> <p>13 contact. Is that --</p> <p>14 Q. No, that's not -- let me rephrase it.</p> <p>15 Just because we have a fire next to the SCR</p> <p>16 doesn't mean that fire was caused by hot-surface</p> <p>17 ignition from heat from the SCR.</p> <p>18 A. I would agree, in that hot-surface ignition requires</p> <p>19 contact.</p> <p>20 Q. Okay. Let me phrase this a different way.</p> <p>21 There are other reasons a fire might have</p> <p>22 started next to the SCR besides heat from the</p> <p>23 SCR canister itself, is that correct?</p> <p>24 A. Yes.</p> <p>25 Q. You could have an electrical fire in that area, is</p>	<p style="text-align: right;">Page 76</p> <p>1 Q. We talked earlier about how just because a fire occurs</p> <p>2 does not mean that there's a defect in a piece of</p> <p>3 equipment. Do you remember that question?</p> <p>4 A. Yes.</p> <p>5 Q. The same token also applies in reverse, that just</p> <p>6 because a defect exists does not mean that it caused</p> <p>7 the fire. Is that fair?</p> <p>8 A. Yes.</p> <p>9 Q. And a good example is you can have a vehicle fire, but</p> <p>10 if a taillight is defective on the back and the</p> <p>11 vehicle fire started on the engine, that defective</p> <p>12 taillight doesn't necessarily have anything to do with</p> <p>13 the fire, is that correct?</p> <p>14 A. Correct.</p> <p>15 Q. So you have to establish a nexus between the defect</p> <p>16 and the cause of the fire for that defect to be</p> <p>17 relevant to your analysis, is that correct?</p> <p>18 A. Correct.</p> <p>19 Q. So are you offering opinions about the actual</p> <p>20 manufacture of this tractor, how it was made, as</p> <p>21 opposed to its design?</p> <p>22 A. No.</p> <p>23 Q. Do you believe that CNH did anything inappropriate in</p> <p>24 making this particular unit?</p> <p>25 MR. CORETTI: You're not talking about</p>

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<p style="text-align: right;">Page 77</p> <p>1 design, you're talking about --</p> <p>2 MR. ROBINSON: Yeah, let me rephrase that.</p> <p>3 BY MR. ROBINSON:</p> <p>4 Q. Have you identified any manufacturing defects in this</p> <p>5 particular unit?</p> <p>6 A. No.</p> <p>7 Q. And a manufacturing defect would be any deviations</p> <p>8 from the specifications of how it should be built as</p> <p>9 opposed to how it actually was built?</p> <p>10 A. Correct.</p> <p>11 Q. And you have not identified any of those?</p> <p>12 A. I have not.</p> <p>13 Q. Are you offering opinions today about the sufficiency</p> <p>14 of the warnings and instructions that CNH provided to</p> <p>15 its operators?</p> <p>16 A. No.</p> <p>17 Q. So you won't be testifying that CNH's warnings should</p> <p>18 have included additional detail?</p> <p>19 A. No.</p> <p>20 Q. Do you believe that the warnings were sufficient to</p> <p>21 instruct operators on how to appropriately clean this</p> <p>22 tractor?</p> <p>23 A. No.</p> <p>24 Q. You do not believe they were sufficient?</p> <p>25 A. I don't.</p>	<p style="text-align: right;">Page 79</p> <p>1 or testified yesterday that CNH should have</p> <p>2 specifically told operators to make sure to clean in</p> <p>3 the area immediately around the SCR canister, and</p> <p>4 CNH's failure to specifically instruct about that area</p> <p>5 is a warning defect.</p> <p>6 Do you hold that same opinion?</p> <p>7 A. I don't have that opinion.</p> <p>8 Q. So your opinion is there was debris on the tractor</p> <p>9 that has not been cleaned, but whether that was the</p> <p>10 result of the operator not following instructions or</p> <p>11 the instructions not being sufficient, you don't know?</p> <p>12 A. Correct.</p> <p>13 Q. Have you had a chance to review the instructions that</p> <p>14 CNH does provide?</p> <p>15 A. cursorily.</p> <p>16 Q. Are they part of your file materials?</p> <p>17 A. Yes, we would have that in electronic fashion.</p> <p>18 Q. And I think during the break you were going to look</p> <p>19 for additional materials related to Dr. Smith's</p> <p>20 investigation. Were you able to find anything?</p> <p>21 A. Yes.</p> <p>22 Q. What did you locate?</p> <p>23 A. So I located the physical file, typically what we were</p> <p>24 working with, and I found three documents which I've</p> <p>25 copied for our purposes. The first is a single-page</p>
<p style="text-align: right;">Page 78</p> <p>1 Q. But you -- are you going to be offering that opinion</p> <p>2 in this case?</p> <p>3 A. No.</p> <p>4 Q. Okay. Is there a reason why you're not offering that</p> <p>5 opinion, even though you hold that opinion?</p> <p>6 A. I've not seen the particular vehicle itself, so I</p> <p>7 can't render that specific opinion.</p> <p>8 Q. But you've seen --</p> <p>9 A. From the photographs I've seen, obviously there was</p> <p>10 crop debris still left within the vehicle. So in</p> <p>11 terms of instruction by the manufacturer to clean</p> <p>12 particular areas or to expose particular areas, had</p> <p>13 those instructions been followed, they were</p> <p>14 incomplete. Had they been followed, material still</p> <p>15 resided in the vehicle.</p> <p>16 So I'm not clear whether it's due to lack</p> <p>17 of maintenance or improper instruction. However, we</p> <p>18 have an entrapment area that's available on the</p> <p>19 vehicle, which is a design issue.</p> <p>20 Q. Okay. Are you offering the opinion that the</p> <p>21 instructions that CNH provided did not tell the</p> <p>22 operator to clean that particular entrapment area that</p> <p>23 you're describing?</p> <p>24 A. No.</p> <p>25 Q. And let me expand on that. Mr. Wilson is testifying,</p>	<p style="text-align: right;">Page 80</p> <p>1 handwritten note, which is more of an introductory</p> <p>2 contact assignment.</p> <p>3 Q. These are Dr. Smith's notes?</p> <p>4 A. Yes.</p> <p>5 Q. I would like to go ahead and mark this as Exhibit 32,</p> <p>6 and I'm okay with this copy --</p> <p>7 A. Yeah, that's your copy.</p> <p>8 MARKED FOR IDENTIFICATION:</p> <p>9 DEPOSITION EXHIBIT 32</p> <p>10 11:28 a.m.</p> <p>11 BY MR. ROBINSON:</p> <p>12 Q. Have you seen these notes before today?</p> <p>13 A. No.</p> <p>14 Q. So you haven't discussed this information with</p> <p>15 Dr. Smith?</p> <p>16 A. No, other than having discussed that from his</p> <p>17 recollection in our conversations.</p> <p>18 Q. This appears to be a set of notes, perhaps the initial</p> <p>19 notes taken when he received the assignment from</p> <p>20 Mr. Coretti. Is that fair, or do you know if these</p> <p>21 are the initial notes?</p> <p>22 A. May I look at that?</p> <p>23 Q. Sure.</p> <p>24 A. That's what it appears to be.</p> <p>25 The second document, then, are handwritten</p>

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<p style="text-align: right;">Page 81</p> <p>1 notes by Dr. Smith, what I assume would be from the</p> <p>2 site investigation, as well as a copy of our chain of</p> <p>3 evidence document in which he collected some crop</p> <p>4 debris from the fire scene.</p> <p>5 MR. ROBINSON: I'm going to mark this</p> <p>6 second document as Exhibit 33.</p> <p>7 MARKED FOR IDENTIFICATION:</p> <p>8 DEPOSITION EXHIBIT 33</p> <p>9 11:30 a.m.</p> <p>10 BY MR. ROBINSON:</p> <p>11 Q. I want to go back to those notes, if I can. Do you</p> <p>12 have another copy of these, or is this our only copy?</p> <p>13 A. This is the original.</p> <p>14 Q. Okay. So I'm looking at the note, the first document</p> <p>15 you gave me, which is Exhibit 32. If we can just go</p> <p>16 over the detail here, it starts off with Mr. Coretti's</p> <p>17 name and address, but then underneath that is a</p> <p>18 listing of the make and model of the New Flevo Dairy</p> <p>19 tractor. Is that correct?</p> <p>20 So it says T8, and then the year 2014 off</p> <p>21 to the side. Do you see that?</p> <p>22 A. Yes.</p> <p>23 Q. Do you know if this is a 2014 tractor or not?</p> <p>24 A. I believe it's a 2012 tractor.</p> <p>25 Q. So that's a typo of some type or just a mistake?</p>	<p style="text-align: right;">Page 83</p> <p>1 A. To the best I can tell.</p> <p>2 Q. So to the best of your knowledge, is this information</p> <p>3 that -- at the top of the sheet, is this information</p> <p>4 that was provided by Mr. Coretti to Dr. Smith about</p> <p>5 the model, about the burden of proof, and about this</p> <p>6 Deere model?</p> <p>7 A. I wouldn't know.</p> <p>8 Q. Do you know as of the date of this document, July 26,</p> <p>9 2017, whether Dr. Smith had undertaken any activities</p> <p>10 to investigate this fire?</p> <p>11 A. I do not know.</p> <p>12 Q. Do you know when he first began his efforts to</p> <p>13 investigate the fire?</p> <p>14 A. My understanding would be the date of assignment,</p> <p>15 which would have been on or around July 28th, 2017.</p> <p>16 Q. So these notes are from July 26, 2017. So this is</p> <p>17 before he was even assigned to the work, is that</p> <p>18 correct?</p> <p>19 A. Correct.</p> <p>20 Q. So perhaps this was an initial call before he received</p> <p>21 the official assignment?</p> <p>22 A. Perhaps.</p> <p>23 Q. And I think it's fair to assume that he had not</p> <p>24 actually done any kind of inspection by this point?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 82</p> <p>1 A. A mistake.</p> <p>2 Q. And then underneath that it lists "burden of proof,"</p> <p>3 and then underneath that it says -- can you interpret</p> <p>4 what that next line says?</p> <p>5 A. No.</p> <p>6 Q. It says something "between defect and damages." Is</p> <p>7 that right?</p> <p>8 A. I see "between defect and damages."</p> <p>9 Q. But you can't read that first word, either?</p> <p>10 A. No.</p> <p>11 Q. And then underneath that it says "failed to design for</p> <p>12 safe use." Is that correct?</p> <p>13 A. That's what it appears.</p> <p>14 Q. And then on the right side it says "Deere model: 2012</p> <p>15 9660, Richland, Michigan," and then I believe the next</p> <p>16 line says "outside warranty." Have I read that</p> <p>17 correctly?</p> <p>18 A. To the best of my interpretation.</p> <p>19 Q. Do you know if Dr. Smith investigated a Deere 9660 in</p> <p>20 Richland, Michigan?</p> <p>21 A. I do not know.</p> <p>22 Q. And then just from reviewing below that, it looks like</p> <p>23 there's several tasks and then an estimated amount of</p> <p>24 time for each of those tasks, is that correct, to the</p> <p>25 best you can tell?</p>	<p style="text-align: right;">Page 84</p> <p>1 Q. Moving to Exhibit 33 --</p> <p>2 A. Do we want to continue from the file? That is 33,</p> <p>3 then? All right, go ahead.</p> <p>4 Q. Yeah. I've already marked this as Exhibit 33.</p> <p>5 A. Okay, thank you.</p> <p>6 Q. And looking at Exhibit 33, what are these notes, if</p> <p>7 you can tell?</p> <p>8 A. I would assume these are Dr. Smith's field notes from</p> <p>9 the inspection.</p> <p>10 Q. From his investigation?</p> <p>11 A. Yes.</p> <p>12 Q. Have you reviewed these materials in preparation of</p> <p>13 the report and for this deposition today?</p> <p>14 A. No.</p> <p>15 Q. The second page of Exhibit 33 is more notes. Can you</p> <p>16 tell what these notes are for?</p> <p>17 A. My suspicion, this is examination of an exemplar</p> <p>18 tractor.</p> <p>19 Q. And at the top it has Hoffland Dairy, LLC, written?</p> <p>20 A. Yes.</p> <p>21 Q. Do you know if this tractor had been involved in a</p> <p>22 fire or not?</p> <p>23 A. I do not know.</p> <p>24 Q. The Hoffland Dairy fire, is that relevant to your</p> <p>25 opinions in any way?</p>

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<p style="text-align: right;">Page 85</p> <p>1 A. Yes.</p> <p>2 Q. In what way?</p> <p>3 A. I believe this was a tractor as an exemplar.</p> <p>4 Q. Okay. So how is the -- how is this tractor from</p> <p>5 Hoffland Dairy impacted or how is it relevant to your</p> <p>6 opinions?</p> <p>7 A. In the investigation, the initial assignment was for</p> <p>8 investigation of a tractor fire. As a part of the</p> <p>9 investigation by Mr. Wilson, he continued to find</p> <p>10 other tractors that had experienced fire events, and</p> <p>11 so in that regard I believe Mr. -- pardon me,</p> <p>12 Dr. Smith's investigation also included another</p> <p>13 tractor that had suffered a similar heat event but not</p> <p>14 incapacitation of the vehicle.</p> <p>15 Q. Do you know what model tractor the Hoffland Dairy fire</p> <p>16 was?</p> <p>17 A. A T8.330.</p> <p>18 Q. So that's a different model from this tractor, is that</p> <p>19 correct?</p> <p>20 A. Correct.</p> <p>21 Q. Do you know if the T8.330 has the same design as the</p> <p>22 T8.390 with respect to the SCR canister?</p> <p>23 A. It appears to have the same configuration, falls</p> <p>24 within the same family, and is listed in the same</p> <p>25 owner/operator's manual.</p>	<p style="text-align: right;">Page 87</p> <p>1 fuel tank, and in the family operating manual for the</p> <p>2 T8 series, inclusive of a 330 and 390, it does not</p> <p>3 show different orientations, organizations, or</p> <p>4 arrangements of the shielding and guarding. There's</p> <p>5 no appearance of a SCR canister protruding or</p> <p>6 extruding from this particular housing in the family</p> <p>7 of tractors.</p> <p>8 So I would have to rely upon the</p> <p>9 configuration being common for the family of the T8</p> <p>10 series, inclusive of 330 and 390, to have the</p> <p>11 SCR canister surrounded by the plastic fuel tank.</p> <p>12 Q. Do you know what the Hoffland Dairy tractor was being</p> <p>13 used to do at the time of the fire?</p> <p>14 A. I do not.</p> <p>15 Q. Do you know what level of RPMs it was operating at</p> <p>16 that day?</p> <p>17 A. I do not.</p> <p>18 Q. Do those factors impact your understanding of how hot</p> <p>19 the exhaust and the surface temperature of the</p> <p>20 SCR canister become during operation?</p> <p>21 A. Yes.</p> <p>22 Q. So the higher the RPMs, the hotter the SCR canister?</p> <p>23 A. The greater the load and the higher the RPMs, the</p> <p>24 greater the temperature of the SCR canister.</p> <p>25 Q. Do you know what full throttle is, how many RPMs that</p>
<p style="text-align: right;">Page 86</p> <p>1 Q. Do you know what year of manufacture the Hoffland</p> <p>2 Dairy tractor is?</p> <p>3 A. I do not.</p> <p>4 Q. We discussed earlier when we were going through your</p> <p>5 file that there is a Tier 4A and then there was a</p> <p>6 Tier 4B line of equipment. Is that correct?</p> <p>7 A. Yes, correct.</p> <p>8 Q. Do you know whether this particular tractor is a</p> <p>9 Tier 4A or a Tier 4B?</p> <p>10 A. The configuration matches a Tier 4A.</p> <p>11 Q. How do you know that?</p> <p>12 A. The SCR canister sits within -- pardon me, the</p> <p>13 SCR canister is surrounded by the plastic fuel tank in</p> <p>14 this particular tractor.</p> <p>15 Q. And are you talking about the Flevo Dairy or the</p> <p>16 Hoffland Dairy?</p> <p>17 A. You're asking me about the Hoffland Dairy, and I'm</p> <p>18 speaking about the Hoffland Dairy.</p> <p>19 Q. Okay, I was just making sure.</p> <p>20 How can you tell that the SCR canister sits</p> <p>21 within the fuel tank in this design on this tractor?</p> <p>22 A. A couple different ways. First of all, in examining</p> <p>23 the photographs of the exemplar which Dr. Smith took</p> <p>24 showing this tractor, the tractor itself that was</p> <p>25 involved also surrounded the SCR canister with the</p>	<p style="text-align: right;">Page 88</p> <p>1 is on a T8.390?</p> <p>2 A. I do not.</p> <p>3 Q. The third page of Exhibit 33 is a chain of possession</p> <p>4 log. What evidence was collected?</p> <p>5 A. Organic debris from below the SCR catalyst.</p> <p>6 Q. Is that on the Hoffland Dairy fire or the new Flevo</p> <p>7 fire?</p> <p>8 A. New Flevo fire.</p> <p>9 Q. And do you all still have that evidence?</p> <p>10 A. Yes.</p> <p>11 Q. Has it been tested in any way?</p> <p>12 A. No.</p> <p>13 Q. What was the purpose of collecting that evidence?</p> <p>14 A. I do not know.</p> <p>15 Q. Is the collection of the evidence important to your</p> <p>16 opinions in any way?</p> <p>17 A. No.</p> <p>18 Q. Do you plan to do any kind of testing of that debris?</p> <p>19 A. Not unless instructed to.</p> <p>20 Q. And you haven't been instructed to at this point?</p> <p>21 A. Correct.</p> <p>22 Q. All right. Anything else that you were able to</p> <p>23 locate?</p> <p>24 A. Within his file he had a document, air pollution</p> <p>25 control technology fact sheet, EPA-452/F-03-032,</p>

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<p style="text-align: right;">Page 89</p> <p>1 regarding selective catalytic reduction.</p> <p>2 MR. ROBINSON: We'll mark this article as</p> <p>3 Exhibit 34.</p> <p>4 MARKED FOR IDENTIFICATION:</p> <p>5 DEPOSITION EXHIBIT 34</p> <p>6 11:42 a.m.</p> <p>7 BY MR. ROBINSON:</p> <p>8 Q. Do you know -- have you ever reviewed that article</p> <p>9 before?</p> <p>10 A. No.</p> <p>11 Q. Do you have any idea what the conclusion of this</p> <p>12 article is, this fact sheet?</p> <p>13 A. No.</p> <p>14 Q. Do you know what the content of it is?</p> <p>15 A. The content generally discusses how the SCR equipment</p> <p>16 operates and offers a range of temperatures for the</p> <p>17 equipment to operate within.</p> <p>18 Q. And when you say "offers a range," is this the range</p> <p>19 which is acceptable in the industry?</p> <p>20 A. I do not know.</p> <p>21 Q. This document is produced by the Federal EPA, is that</p> <p>22 correct?</p> <p>23 A. Yes.</p> <p>24 Q. Does this provide the optimum temperature range for</p> <p>25 the outside skin surface of the SCR canister?</p>	<p style="text-align: right;">Page 91</p> <p>1 front page of the article which contains the salient</p> <p>2 information specific to the operational temperatures</p> <p>3 of the SCR catalyst. So without reviewing the</p> <p>4 remainder of the article, that is the key point that's</p> <p>5 referenced in our report.</p> <p>6 Q. Anything else that you were able to locate from</p> <p>7 Dr. Smith's file?</p> <p>8 A. The other would be the transfer memo file that we</p> <p>9 spoke of. This is a multi-page document. It would</p> <p>10 have been in a Microsoft OneNote file, and let me</p> <p>11 offer, there's an identification error on the front</p> <p>12 page of this document.</p> <p>13 Q. Okay, and I'll take a look at it.</p> <p>14 MR. ROBINSON: We will mark this transfer</p> <p>15 file as Exhibit 35.</p> <p>16 MARKED FOR IDENTIFICATION:</p> <p>17 DEPOSITION EXHIBIT 35</p> <p>18 11:45 a.m.</p> <p>19 A. On the front page, top left, we reference our project</p> <p>20 number --</p> <p>21 BY MR. ROBINSON:</p> <p>22 Q. Okay.</p> <p>23 A. -- and that project number is incorrect. It should</p> <p>24 end with an 8, 178, instead of a zero. It's a typo by</p> <p>25 Dr. Smith.</p>
<p style="text-align: right;">Page 90</p> <p>1 A. No.</p> <p>2 Q. So it's just the interior temperature of the canister?</p> <p>3 A. Correct.</p> <p>4 Q. Given that you haven't reviewed this article in</p> <p>5 preparation of your opinions, is it safe to say you</p> <p>6 don't need to rely on this to form your opinions?</p> <p>7 A. Dr. Smith used this as part of his opinion,</p> <p>8 specifically relating to the temperatures encountered</p> <p>9 within the SCR catalyst. So I would rely upon</p> <p>10 Dr. Smith's interpretation of that document</p> <p>11 incorporated into our report.</p> <p>12 Q. Okay. Now, this is one of the difficult parts of</p> <p>13 Dr. Smith not testifying, is you've been provided to</p> <p>14 offer all of the opinions in the report, so even the</p> <p>15 ones that Dr. Smith initially developed.</p> <p>16 So do you feel like you have reviewed the</p> <p>17 appropriate materials to offer the basis for the</p> <p>18 opinions other than just saying that's what Dr. Smith</p> <p>19 concluded?</p> <p>20 A. I would agree.</p> <p>21 Q. Okay. So even though Dr. Smith looked at this article</p> <p>22 and relied on it, can you -- do you feel comfortable</p> <p>23 supporting all of the opinions in the report without</p> <p>24 looking at this article?</p> <p>25 A. Let me offer, I reviewed -- I examined, I viewed the</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. So it should be 17802558?</p> <p>2 A. 8, it should be.</p> <p>3 Q. I'm not going to change the document, but we'll</p> <p>4 understand from the transcript it's different.</p> <p>5 A. So it would match our assignment number.</p> <p>6 Q. So this document is something that he had in his file,</p> <p>7 just a collection of various materials, is that</p> <p>8 correct?</p> <p>9 A. Yes.</p> <p>10 Q. And it looks like -- it starts off, there's some</p> <p>11 pictures of different model tractors. There's a</p> <p>12 Magnum 340, then a John Deere, then a --</p> <p>13 A. Challenger.</p> <p>14 Q. Yeah, I think that's a Challenger, too, a Challenger</p> <p>15 by AGCO. Is that correct?</p> <p>16 A. Yes.</p> <p>17 Q. And off to the side we have questions like, "What</p> <p>18 types of crops was the tractor used for? What did</p> <p>19 Burnips do during the pre-fire service?" These are</p> <p>20 questions by Dr. Smith?</p> <p>21 A. Correct.</p> <p>22 Q. Do you know if he ever got answers to those questions?</p> <p>23 A. I do not know.</p> <p>24 Q. What was the purpose of looking at the competitors for</p> <p>25 the T8.390?</p>

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<p style="text-align: right;">Page 93</p> <p>1 A. My assumption would be for configuration.</p> <p>2 Q. And comparison as far as how the SCR canisters are</p> <p>3 configured?</p> <p>4 A. Positioned, located, shrouded, protected, exposed.</p> <p>5 Q. Do you have a conclusion as to whether the T8.390 is</p> <p>6 configured differently than the other tractors?</p> <p>7 A. I don't have a position.</p> <p>8 Q. Have you reviewed the pictures and diagrams of other</p> <p>9 tractors to know that?</p> <p>10 A. No.</p> <p>11 Q. You don't know if the T8.390 is consistent with the</p> <p>12 industry standard as far as the configuration of the</p> <p>13 SCR canisters?</p> <p>14 A. I don't know that there's an industry standard for the</p> <p>15 configuration of a canister, in terms of location on</p> <p>16 the vehicle. The internal components's size and</p> <p>17 surface area would be standardized, but where you</p> <p>18 place it on the vehicle may not be standardized.</p> <p>19 Q. Okay. Do you --</p> <p>20 A. And in terms of -- I don't know that Deere and Case IH</p> <p>21 offer the same standard location for the canister.</p> <p>22 Q. Do you know if the T8.390 SCR canister operates at a</p> <p>23 higher skin temperature than its competitors's SCR</p> <p>24 canisters?</p> <p>25 A. I do not know.</p>	<p style="text-align: right;">Page 95</p> <p>1 talking about the same thing.</p> <p>2 An SCR canister is an area where emissions</p> <p>3 are reduced off of a piece of equipment, correct?</p> <p>4 A. Yes.</p> <p>5 Q. And exhaust gas flows through there and undergoes a</p> <p>6 chemical process before it's emitted from the top of</p> <p>7 the stack?</p> <p>8 A. Correct.</p> <p>9 Q. The surface that you see on the SCR canister, it's not</p> <p>10 the only barrier between the outside ambient air and</p> <p>11 the exhaust gas, is that correct?</p> <p>12 A. Correct.</p> <p>13 Q. Have you ever opened an SCR canister to know what's</p> <p>14 inside?</p> <p>15 A. No.</p> <p>16 Q. Do you know if it is a double-walled configuration?</p> <p>17 A. I would assume so.</p> <p>18 Q. Do you know if it has any level of insulation inside</p> <p>19 of it, as well?</p> <p>20 A. I would assume so.</p> <p>21 Q. Do you know what the exhaust gas temperature on the</p> <p>22 inside of the canister is for a T8.390?</p> <p>23 A. No.</p> <p>24 Q. And so I take it you don't know the level of reduction</p> <p>25 that occurs through the various design features of a</p>
<p style="text-align: right;">Page 94</p> <p>1 Q. Do you have an opinion that the SCR canister operates</p> <p>2 at a temperature that is too high to be safe?</p> <p>3 A. No.</p> <p>4 Q. Do you believe that it operated at a safe temperature?</p> <p>5 A. I don't know.</p> <p>6 Q. In fact, you don't know what the skin temperature</p> <p>7 would have been on the SCR canister during operation?</p> <p>8 A. Correct.</p> <p>9 Q. Do you know if a person can touch the outside of an</p> <p>10 SCR canister without burning their hand?</p> <p>11 A. I doubt it.</p> <p>12 Q. Do you know one way or the other?</p> <p>13 A. I do not know.</p> <p>14 Q. And when you say you doubt it, what's the basis for</p> <p>15 doubting that?</p> <p>16 A. From personal experience coming in contact with</p> <p>17 exhaust systems, even through the muffler end, they</p> <p>18 are hot to the touch and cause skin burns, and also,</p> <p>19 these areas typically are shrouded or protected to</p> <p>20 prevent accidental contact.</p> <p>21 So if the SCR canister does not pose a burn</p> <p>22 hazard or contact hazard, I'm confounded as to why it</p> <p>23 needs to be shrouded.</p> <p>24 Q. You compared the SCR canister to a muffler, and I want</p> <p>25 to make sure we're using the same lingo and we're</p>	<p style="text-align: right;">Page 96</p> <p>1 canister before you reach the outside skin</p> <p>2 temperature?</p> <p>3 A. I do not.</p> <p>4 Q. There's also a section that looks like it may have</p> <p>5 been cut-and-paste out of an operator's manual into</p> <p>6 this document. Is this your, is this -- is it your</p> <p>7 understanding that these are instructions related to</p> <p>8 the safety rules fire prevention for a T8.390?</p> <p>9 A. Yes.</p> <p>10 Q. And this came from CNH's manual?</p> <p>11 A. Yes.</p> <p>12 Q. Do you know why he only cut this section out as</p> <p>13 opposed to other sections, as well?</p> <p>14 A. I do not.</p> <p>15 Q. Have you had a chance to review the entire manual?</p> <p>16 A. No.</p> <p>17 Q. And you won't be offering opinions as to the manual's</p> <p>18 sufficiency or insufficiency?</p> <p>19 A. No.</p> <p>20 Q. There's a picture here of a 2017 T8 tractor that has</p> <p>21 dual wheels on the front and back, four-wheel drive.</p> <p>22 Do you know why this particular model is included in</p> <p>23 this set of notes?</p> <p>24 A. No.</p> <p>25 Q. And then there are the design drawings for a Tier 4A</p>

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<p style="text-align: right;">Page 97</p> <p>1 design from March 2011 through September 2014. Is</p> <p>2 that your understanding of the design for the SCR on</p> <p>3 the tractor in question?</p> <p>4 A. That's my understanding of the configuration of the</p> <p>5 tractor in question.</p> <p>6 Q. And there's several more diagrams taken from, looks</p> <p>7 like a parts catalog. And then on the seventh page of</p> <p>8 Exhibit 35 is a picture of a, I guess it's a 2014 T8</p> <p>9 tractor. Is that correct? I'm not sure. Maybe you</p> <p>10 can take a look.</p> <p>11 A. This appears to be the Genesis T8 model.</p> <p>12 Q. So that's a different model than what we're talking</p> <p>13 about here?</p> <p>14 A. The T8 model was superceded by the Genesis T8 model,</p> <p>15 so that would be an exemplar of the altered design,</p> <p>16 not the subject tractor.</p> <p>17 Q. And why is this particular model included in these</p> <p>18 notes, if you know?</p> <p>19 A. The vehicle was modified in arrangement of the</p> <p>20 components to relocate the SCR canister up and away</p> <p>21 from the fuel tank. So the configuration was</p> <p>22 different.</p> <p>23 So removing the potential hazard, which</p> <p>24 returns to the design, FMEA had the manufacturer</p> <p>25 review this and determined, "We have an issue with</p>	<p style="text-align: right;">Page 99</p> <p>1 view, I have hot gases exiting the engine, traveling</p> <p>2 into a catalyst which also creates heat, in and of</p> <p>3 itself, surrounded by a plastic envelope that is now</p> <p>4 shrouded intermittently with a heat shield and</p> <p>5 contains fuel -- pardon me. If there's a design</p> <p>6 hazard that could occur, that seems quite prime.</p> <p>7 So I would think from a fault in the tank,</p> <p>8 a fault in the insulation, a malfunction of the engine</p> <p>9 overheating, we have multiple failures that could</p> <p>10 occur causing a fire event. As a manufacturer, why</p> <p>11 not remove this particular cause to another location</p> <p>12 and eliminate these multiple failures that may occur</p> <p>13 resulting in fire.</p> <p>14 Q. And I understand that you see the design changes as a</p> <p>15 way of eliminating potential risks that you've</p> <p>16 identified.</p> <p>17 A. Correct.</p> <p>18 Q. But as far as that, the move and the reconfiguration</p> <p>19 of the SCR, and that CNH therefore recognized there</p> <p>20 were certain design hazards, you wouldn't know, is</p> <p>21 that correct?</p> <p>22 A. I wouldn't know what design hazards they recognized.</p> <p>23 However, I would assume that alteration of the</p> <p>24 configuration, even this dramatic movement of the</p> <p>25 SCR canister, would be not a free event to CNH, as the</p>
<p style="text-align: right;">Page 98</p> <p>1 this area. Let's design away from it; let's design</p> <p>2 away from placing a very hot-operating object</p> <p>3 surrounded by a plastic envelope containing</p> <p>4 combustible fuel."</p> <p>5 Q. Do you know if this Genesis model has the Tier 4A or</p> <p>6 Tier 4B design?</p> <p>7 A. Tier 4B.</p> <p>8 Q. Which is different than the tractor involved in this</p> <p>9 fire?</p> <p>10 A. Correct.</p> <p>11 Q. Do you know any other differences between Tier 4A and</p> <p>12 Tier 4B besides -- I mean, do you know what the</p> <p>13 differences are?</p> <p>14 A. No.</p> <p>15 Q. Do you know why CNH decided to change the design of</p> <p>16 the SCR canister in the configuration in the Genesis</p> <p>17 model as compared to the T8.390?</p> <p>18 A. No.</p> <p>19 Q. And the statement earlier was, "Let's remove this</p> <p>20 issue to move it up and away from the fuel tank." Is</p> <p>21 that what your testimony was?</p> <p>22 A. Yes.</p> <p>23 Q. And what's the basis for that statement, that that's</p> <p>24 why they changed this design?</p> <p>25 A. From a casual observer, from an engineering point of</p>	<p style="text-align: right;">Page 100</p> <p>1 configuration's already been solidified in the T8. So</p> <p>2 why spend the money to move things around and</p> <p>3 reconfigure them unless there is a benefit or removal</p> <p>4 of a hazard.</p> <p>5 Q. Well, there's also the change between the Tier 4A and</p> <p>6 the Tier 4B that occurred in these models, correct?</p> <p>7 A. Correct.</p> <p>8 Q. And it is possible that CNH was also accounting for</p> <p>9 different emission standards that it had to meet in</p> <p>10 the Tier 4B model that it did not have to meet in the</p> <p>11 Tier 4A, correct?</p> <p>12 A. Correct.</p> <p>13 Q. So there could be many rationales or justifications</p> <p>14 for the shift besides a recognition of a hazard?</p> <p>15 A. Correct.</p> <p>16 Q. And you would have to defer to CNH as to why it</p> <p>17 actually made certain design changes between those two</p> <p>18 models?</p> <p>19 A. Correct.</p> <p>20 Q. And then starting at the bottom of page 9 is "Summary</p> <p>21 of opinion," and then there's a total of, it looks</p> <p>22 like seven enumerated bullets with opinions and</p> <p>23 statements, I presume, from Dr. Smith?</p> <p>24 A. Correct.</p> <p>25 Q. And do you know if these form the basis of his and</p>

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<p style="text-align: right;">Page 101</p> <p>1 your report?</p> <p>2 A. Yes.</p> <p>3 Q. They did?</p> <p>4 A. Yes. Lunchtime?</p> <p>5 Q. Sure.</p> <p>6 (Off the record at 11:58 a.m.)</p> <p>7 (Back on the record at 12:39 p.m.)</p> <p>8 MR. ROBINSON: We're back on the record.</p> <p>9 BY MR. ROBINSON:</p> <p>10 Q. And I believe we had just -- when we finished we were</p> <p>11 looking at the notes from Dr. Wright's transfer</p> <p>12 memo --</p> <p>13 MR. CORETTI: Smith.</p> <p>14 BY MR. ROBINSON:</p> <p>15 Q. I'm sorry, Dr. Smith's transfer memo to you. You were</p> <p>16 describing earlier the radiant effect that can occur</p> <p>17 outside of, say, an SCR canister, where the heat can</p> <p>18 actually create temperatures that are higher than the</p> <p>19 surface temperature of the SCR canister?</p> <p>20 A. Correct.</p> <p>21 Q. Do you know how much in this particular design for the</p> <p>22 T8.390 that radiant effect can increase the</p> <p>23 temperature?</p> <p>24 A. No.</p> <p>25 Q. Is it something that can be quantified as a factor or</p>	<p style="text-align: right;">Page 103</p> <p>1 A. No.</p> <p>2 Q. Do you know if anybody else has tested that?</p> <p>3 A. I do not know.</p> <p>4 Q. Are there any publications that have evaluated this</p> <p>5 radiant effect in the context of farm equipment, that</p> <p>6 you know of?</p> <p>7 A. Not that I know of.</p> <p>8 Q. Are there any -- and when I say "publications," I mean</p> <p>9 studies or tests that you know of that are published.</p> <p>10 Is that --</p> <p>11 A. I understand. Not that I know of.</p> <p>12 Q. Are there any studies or tests that have evaluated</p> <p>13 this radiant effect and increase in temperature just</p> <p>14 in general that you can cite?</p> <p>15 A. Not that I can cite.</p> <p>16 Q. Things that you've reviewed in your just general</p> <p>17 knowledge?</p> <p>18 A. General knowledge, engineering courses in heat</p> <p>19 transfer, radiant heat transfer equations, yes.</p> <p>20 Q. Is it safe to assume that if the heat is transferring</p> <p>21 from the SCR canister to the debris, it's also</p> <p>22 transferring to that shield around the canister, is</p> <p>23 that correct?</p> <p>24 A. Yes.</p> <p>25 Q. And so if there is a radiant effect, would it also be</p>
<p style="text-align: right;">Page 102</p> <p>1 a multiplier of the skin temperature of the</p> <p>2 SCR canister?</p> <p>3 A. No.</p> <p>4 Q. Would you expect that effect to be something like</p> <p>5 doubling the temperature of the skin surface?</p> <p>6 A. No.</p> <p>7 Q. Not that high?</p> <p>8 A. Not that high.</p> <p>9 Q. What about 50 percent higher?</p> <p>10 A. No.</p> <p>11 Q. What about 25 percent higher?</p> <p>12 A. I couldn't say.</p> <p>13 Q. Okay. So that's plausible, in your opinion, that it</p> <p>14 could go up about 25 percent?</p> <p>15 A. It's possible.</p> <p>16 Q. And so just so we're all on the same page, if we have</p> <p>17 a surface temperature of, say, 200 degrees Celsius,</p> <p>18 it's possible that the radiant effect on debris in the</p> <p>19 vicinity could raise the temperature of the debris to</p> <p>20 250 degrees Celsius?</p> <p>21 A. Yes.</p> <p>22 Q. Is that something that could be tested?</p> <p>23 A. Yes.</p> <p>24 Q. Have you undertaken any tests to determine that, for</p> <p>25 this particular model?</p>	<p style="text-align: right;">Page 104</p> <p>1 increasing the temperature of the inside surface of</p> <p>2 the shield?</p> <p>3 A. Yes.</p> <p>4 Q. Do you know how much of a gap is between the shield</p> <p>5 and the canister surface itself?</p> <p>6 A. Approximately two inches.</p> <p>7 Q. Is that uniform all the way around the canister?</p> <p>8 A. Not entirely, because there's convolutions within the</p> <p>9 fuel tank. Let me offer, it does not appear to</p> <p>10 intrude shorter than the two inches but extends</p> <p>11 further than the two inches.</p> <p>12 Q. Okay. So the closest the surface would be is two</p> <p>13 inches?</p> <p>14 A. Yes.</p> <p>15 Q. Do you know what the melting temperature of the</p> <p>16 surface of that shield would be?</p> <p>17 A. No.</p> <p>18 Q. And when I say "shield," I'm talking about the</p> <p>19 component around the canister that can be removed to</p> <p>20 expose the canister. Are you familiar with that?</p> <p>21 A. Yes, but the canister also has an insulation shroud or</p> <p>22 shield, also, as well.</p> <p>23 Q. Okay, so --</p> <p>24 A. So your discrimination is between the front protective</p> <p>25 cover or the surrounding insulation blanket.</p>

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<p style="text-align: right;">Page 105</p> <p>1 Q. Okay. So the canister has a blanket all the way</p> <p>2 around it or just in certain portions?</p> <p>3 A. In certain portions.</p> <p>4 Q. Where is that blanket?</p> <p>5 A. The blanket is where it's facing the fuel tank, so on</p> <p>6 the bottom three sides.</p> <p>7 Q. And what is that blanket composed of?</p> <p>8 A. It's composed of a reflective panel and some fabric</p> <p>9 insulation and a fabric backing.</p> <p>10 Q. And does that, that blanket, does it actually touch</p> <p>11 the canister itself?</p> <p>12 A. It may.</p> <p>13 Q. But the two-inch gap that you're talking about, you</p> <p>14 believe that blanket's in that gap?</p> <p>15 A. Yes.</p> <p>16 Q. And it only encapsulates on the three sides that also</p> <p>17 have the fuel tank?</p> <p>18 A. Yes.</p> <p>19 Q. So, in essence, it separates the canister from the</p> <p>20 fuel tank?</p> <p>21 A. Yes.</p> <p>22 Q. What about the side that does not have the fuel tank</p> <p>23 surrounding it or adjacent to the canister, is there</p> <p>24 any kind of fabric or blanket there?</p> <p>25 A. No.</p>	<p style="text-align: right;">Page 107</p> <p>1 the canister, but that side that faces the tractor,</p> <p>2 the interior of the tractor where the inlet is, you</p> <p>3 don't know if there's a shield there?</p> <p>4 A. I do not.</p> <p>5 Q. Do you have an opinion as to where on the SCR canister</p> <p>6 or SCR system the fire actually originated?</p> <p>7 A. Reviewing the documents from Mr. Wilson as well as</p> <p>8 Mr. -- pardon me, as well as Dr. Smith's</p> <p>9 investigation, it appears that the fire originated</p> <p>10 near the bottom of the SCR canister to the rear and/or</p> <p>11 inboard rear of the canister.</p> <p>12 Q. So closer to the center of the tractor?</p> <p>13 A. Correct.</p> <p>14 Q. On the bottom?</p> <p>15 A. Yes.</p> <p>16 Q. What about the -- would it be on the side closest to</p> <p>17 the front of the tractor or the side closest to the</p> <p>18 back of the tractor?</p> <p>19 A. On the rear. I would assume the rear is the back of</p> <p>20 the tractor.</p> <p>21 Q. Okay, back of the tractor, but towards the center of</p> <p>22 the tractor, on the bottom of the canister?</p> <p>23 A. The SCR is oval in shape, so the general area would be</p> <p>24 on the minimal axis across the canister to the rear,</p> <p>25 sweeping through the arc to the major axis, toward the</p>
<p style="text-align: right;">Page 106</p> <p>1 Q. Is it just air?</p> <p>2 A. Yes.</p> <p>3 Q. And that side, is there a -- is there any type of</p> <p>4 plastic shield in that location?</p> <p>5 A. The front cover.</p> <p>6 Q. So the cover of the canister, if you remove it you can</p> <p>7 see the canister?</p> <p>8 A. Correct.</p> <p>9 Q. Okay. Do you know what material that cover is made</p> <p>10 from?</p> <p>11 A. I do not.</p> <p>12 Q. And so I assume you don't know the melting point of</p> <p>13 that material?</p> <p>14 A. I do not.</p> <p>15 Q. Is there a blanket anywhere else on the SCR system,</p> <p>16 that you know of?</p> <p>17 A. There's an insulation blanket at the entry pipe from</p> <p>18 the engine compartment into the side of the SCR in the</p> <p>19 area where the sensor is positioned.</p> <p>20 Q. And is there also, in that area where the entry pipe</p> <p>21 comes in, is there a shield that's two inches away</p> <p>22 from the entry pipe at that location?</p> <p>23 A. I don't know.</p> <p>24 Q. Okay. And do you understand my question? You talked</p> <p>25 about the two-inch air gap or gap around the rest of</p>	<p style="text-align: right;">Page 108</p> <p>1 inboard section of the tractor.</p> <p>2 Did that make sense?</p> <p>3 Q. It did. I'm going to take a picture to make sure</p> <p>4 we're all clear for the record.</p> <p>5 MR. ROBINSON: Let's go off the record.</p> <p>6 (Off the record at 12:51 p.m.)</p> <p>7 (Back on the record at 12:53 p.m.)</p> <p>8 MR. ROBINSON: So we're back on the record.</p> <p>9 We're going to mark the photograph which you have</p> <p>10 pulled from Dr. Smith's collection of photographs.</p> <p>11 THE WITNESS: The photograph is designated</p> <p>12 P-8300090.</p> <p>13 MARKED FOR IDENTIFICATION:</p> <p>14 DEPOSITION EXHIBIT 36</p> <p>15 12:54 p.m.</p> <p>16 BY MR. ROBINSON:</p> <p>17 Q. And at least at the bottom there's a date of</p> <p>18 August 30th, 2017, is that correct?</p> <p>19 A. Yes.</p> <p>20 Q. And this appears to be a picture of the remnants of</p> <p>21 this tractor. Is that your understanding?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. So on this picture, and if you need a pen, if</p> <p>24 you've got a pen that can mark on the photograph, if</p> <p>25 you could draw an arrow -- if you can take on that</p>

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<p style="text-align: right;">Page 109</p> <p>1 picture and draw a circle to the area of origin, an 2 arrow, and then out to the side write "origin," that 3 would be helpful.</p> <p>4 Thank you. And the area that you have 5 circled is, it includes both the rear side of the 6 canister along with a portion of the inlet pipe that 7 comes down. Is that correct?</p> <p>8 A. Correct, regarding the rear-facing surface of the 9 inlet pipe.</p> <p>10 Q. Do you have an opinion as to the actual surface that 11 caused the ignition of the debris, whether it was the 12 canister or the inlet pipe?</p> <p>13 A. No.</p> <p>14 Q. It could have been either one?</p> <p>15 A. I don't have an opinion.</p> <p>16 Q. Why do you believe the fire started in that location?</p> <p>17 A. This particular area is somewhat remote in terms of 18 access for cleaning. It's behind the inlet pipe and 19 behind the SCR. The burn patterns in and around the 20 area to the left and rear of the SCR canister are much 21 more pronounced and visible than they are in the same 22 view as they appear on the right rear side. And the 23 burn patterns similar to the V patterns as you 24 discussed earlier tend to originate, focus, and fall 25 back to the origin location.</p>	<p style="text-align: right;">Page 111</p> <p>1 blanket in that area?</p> <p>2 A. I think CNH shouldn't put the muffler in the fuel 3 tank. The blanket offered adheres to the fuel tank 4 and has the reflective surface directed at the SCR, so 5 the gap that exists is now between the insulated face, 6 reflective face of the blanket and the SCR. So if the 7 SCR's radiating heat sufficient to require an 8 insulating blanket on the fuel tank, why is it there 9 in the first place?</p> <p>10 The greater hazard I see here is that 11 whether there's debris here or not, this is a 12 hazardous risk assembly. We have a plastic component 13 that can be injured, can be damaged, I could have a 14 fuel leak in proximity, and I can suddenly begin 15 discharging fuel on to a hot surface that I could 16 cause a fire.</p> <p>17 So this protective radiant blanket appears 18 to be an intermediate fix, because I've played a very 19 hot object in a plastic pool of fuel.</p> <p>20 Q. I understand that the design of the SCR next to the 21 fuel tank you believe is not optimal.</p> <p>22 A. Correct.</p> <p>23 Q. Okay. But you would agree that there's no evidence 24 here that the fuel tank ruptured and caused a fire, 25 correct?</p>
<p style="text-align: right;">Page 110</p> <p>1 So this general burn pattern on the rear of 2 the SCR appears to focus into that area from this 3 view.</p> <p>4 Q. And that's different, and the burn patterns are 5 different than the forward side of the SCR canister 6 towards the front of the tractor?</p> <p>7 A. Correct.</p> <p>8 Q. You mentioned that there's a blanket that goes around 9 the SCR canister. Does that blanket encapsulate this 10 area that you've circled?</p> <p>11 A. Yes.</p> <p>12 Q. So if there's a blanket in that area, does that 13 prevent debris from accumulating in that area?</p> <p>14 A. No.</p> <p>15 Q. So debris continues to accumulate even though there is 16 a blanket?</p> <p>17 A. Correct.</p> <p>18 Q. Is your opinion as to the design defect related to 19 this tractor contingent on or include the fact that 20 CNH included a blanket there?</p> <p>21 A. No.</p> <p>22 Q. Do you think the presence of the blanket contributed 23 to the inaccessibility of the area for cleaning?</p> <p>24 A. Yes.</p> <p>25 Q. And do you think that CNH should have not included a</p>	<p style="text-align: right;">Page 112</p> <p>1 A. Correct.</p> <p>2 Q. The fuel tank ultimately did breach, but that was the 3 result of an ongoing fire, fair?</p> <p>4 A. Correct.</p> <p>5 Q. Okay. So the presence of the SCR next to the fuel 6 tank is, although you may believe it's a 7 less-than-optimal design, it didn't cause this fire?</p> <p>8 A. Can you repeat the question?</p> <p>9 Q. The presence of the SCR canister next to the fuel 10 tank, although you believe that less than optimal in 11 design, did not cause this fire?</p> <p>12 A. Correct.</p> <p>13 Q. So what is your defect theory as to the design that 14 actually caused this fire?</p> <p>15 A. The design defect is the entrapment area between the 16 SCR and the next available surface that does not 17 self-clean, and let me further refer to that in the 18 case of the front cover that we discussed earlier, 19 there is a gap under the cover facing groundways, such 20 that if debris would fall in front of the SCR, it can 21 fall through that area.</p> <p>22 There's nothing to say that that fuel tank 23 that's encircling the SCR could not have had the void 24 space immediately beneath the SCR so there's nothing 25 for anything to accumulate upon.</p>

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<p style="text-align: right;">Page 113</p> <p>1 Q. How much gap is between the blanket and the surface of</p> <p>2 the SCR?</p> <p>3 A. Less than two inches.</p> <p>4 Q. Do you know how thick the blanket is?</p> <p>5 A. No.</p> <p>6 Q. Have you looked at any design specifications for the</p> <p>7 blanket?</p> <p>8 A. No design specifications have been provided.</p> <p>9 Q. How do you know that there was a blanket that went</p> <p>10 around that surface of the canister?</p> <p>11 A. I would have to assume so, because that's listed in</p> <p>12 the parts diagram, and exemplar tractors in an</p> <p>13 unburned condition have a similar blanket.</p> <p>14 Q. So your theory is that the gap between the surface of</p> <p>15 the SCR and the blanket allowed for the accumulation</p> <p>16 of debris that did not self-clean?</p> <p>17 A. Correct.</p> <p>18 Q. And you believe the fire did not start on the forward</p> <p>19 side of the canister, but on the rear side of the</p> <p>20 canister?</p> <p>21 A. Correct.</p> <p>22 Q. And maybe you've already answered this, but I just</p> <p>23 want to make sure. You can't say whether it started</p> <p>24 as a result of the heat from the inlet pipe or heat</p> <p>25 from the surface of the SCR?</p>	<p style="text-align: right;">Page 115</p> <p>1 Q. If the fire started next to the inlet pipe and burned</p> <p>2 fuel in that area, would the blanket around the inlet</p> <p>3 pipe have survived the fire?</p> <p>4 A. I don't know.</p> <p>5 Q. Do you know if it did survive the fire?</p> <p>6 A. I don't know.</p> <p>7 Q. The debris that was collected, that was marked as</p> <p>8 evidence by Nederveld, do you know where that debris</p> <p>9 was actually collected on the tractor?</p> <p>10 A. I believe from beneath the SCR canister.</p> <p>11 Q. So between the canister and --</p> <p>12 A. The floor area, or essentially the floor surface</p> <p>13 presented by the fuel tank.</p> <p>14 Q. And in this picture that we're looking at -- I think</p> <p>15 you still have it up on your computer, don't you --</p> <p>16 the fuel tank would have gone under the canister</p> <p>17 itself?</p> <p>18 A. Correct.</p> <p>19 Q. And was there a gap between the bottom of the canister</p> <p>20 and the fuel tank?</p> <p>21 A. Yes.</p> <p>22 Q. How big was that gap?</p> <p>23 A. I don't know.</p> <p>24 Q. But it's your understanding that the debris that was</p> <p>25 collected came from that area?</p>
<p style="text-align: right;">Page 114</p> <p>1 A. Correct.</p> <p>2 Q. Do you know if the inlet pipe itself is encapsulated</p> <p>3 in some type of alternate blanket at that location,</p> <p>4 where it goes into the SCR canister?</p> <p>5 A. There's an insulating blanket that surrounds the inlet</p> <p>6 pipe.</p> <p>7 Q. Do you have any criticism of the design of that</p> <p>8 insulating blanket that goes around the inlet pipe?</p> <p>9 A. It does not secure nor affix to the insulating blanket</p> <p>10 surrounding the SCR, so there's an abutment gap that</p> <p>11 causes an exposure risk.</p> <p>12 Q. Do you know if debris actually accumulated in that</p> <p>13 gap?</p> <p>14 A. I do not know.</p> <p>15 Q. Do you know, in the design of the blanket that goes</p> <p>16 around the inlet, do you know if it has panels that</p> <p>17 are sewn together?</p> <p>18 A. I don't know.</p> <p>19 Q. Have you seen a picture of that blanket?</p> <p>20 A. Yes.</p> <p>21 Q. You just don't recall one way or the other?</p> <p>22 A. I don't recall.</p> <p>23 Q. Do you know if the blanket that was around the</p> <p>24 canister was consumed in the fire?</p> <p>25 A. I don't know.</p>	<p style="text-align: right;">Page 116</p> <p>1 A. Yes.</p> <p>2 Q. Was it burned debris?</p> <p>3 A. No.</p> <p>4 Q. So it's safe to assume the fire didn't go under the</p> <p>5 canister?</p> <p>6 A. The area where the debris was recovered apparently did</p> <p>7 not have sufficient oxygen to support combustion and</p> <p>8 was not consumed in the fire, nor burned.</p> <p>9 Q. I'm going to hand you what we will mark as Exhibit 37.</p> <p>10 MARKED FOR IDENTIFICATION:</p> <p>11 DEPOSITION EXHIBIT 37</p> <p>12 1:06 p.m.</p> <p>13 BY MR. ROBINSON:</p> <p>14 Q. This is a copy of a page from the operator's manual</p> <p>15 that's labeled CNH Flevo 000027.</p> <p>16 You have reviewed this document in</p> <p>17 preparation for today, is that correct?</p> <p>18 A. Yes.</p> <p>19 Q. And you would agree that in the section titled "Safety</p> <p>20 Rules - Fire Protection," there are instructions on</p> <p>21 how to clean this tractor, is that correct?</p> <p>22 A. There are general instructions, yes.</p> <p>23 Q. And there are instructions on how frequently to clean</p> <p>24 the tractor, correct?</p> <p>25 A. Yes.</p>

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<p style="text-align: right;">Page 117</p> <p>1 Q. So you would agree that: At least once each day and 2 at the end of the day, remove all trash and debris 3 from the machine, especially around hot components 4 such as the engine, transmission, exhaust, and 5 battery, et cetera. That's what it instructs, is that 6 correct?</p> <p>7 A. Yes.</p> <p>8 Q. And then later it states: More frequent cleaning of 9 your machine may be necessary depending on the 10 operating environment and conditions. That's the 11 instruction, correct?</p> <p>12 A. Yes.</p> <p>13 Q. And you don't have any criticism as to the frequency 14 with which CNH instructs operators to clean around hot 15 components. Is that right?</p> <p>16 A. I do not.</p> <p>17 Q. And would you agree that the SCR canister is a 18 component of the exhaust system?</p> <p>19 A. Yes.</p> <p>20 Q. And so do you believe that the instruction here 21 adequately instructs operators to clean around the 22 SCR canister?</p> <p>23 A. No.</p> <p>24 Q. And in what way do you not agree with that?</p> <p>25 A. The SCR canister strung by the fuel tank presents an</p>	<p style="text-align: right;">Page 119</p> <p>1 Q. You do have an opinion, but you don't plan on offering 2 it at trial?</p> <p>3 A. Correct.</p> <p>4 Q. Is there a reason why you won't be offering the 5 opinion that you just gave?</p> <p>6 A. I believe as we were discussing it, you were asking if 7 I was an expert in a particular area or an expert in 8 this particular fashion of cleaning the machine, and 9 I'm not an expert in that fashion, though I would have 10 an opinion.</p> <p>11 So my opinion general would not be a 12 qualified opinion.</p> <p>13 Q. Okay, that makes sense. So your opinions are limited 14 to the design itself of the unit and not necessarily 15 the instructions that were provided?</p> <p>16 A. The completeness of the instructions, correct.</p> <p>17 Q. Thank you for the clarification.</p> <p>18 Do you know whether the manual in this case 19 requires the operator to have a fire extinguisher on 20 the equipment?</p> <p>21 A. There should be a fire extinguisher on the equipment.</p> <p>22 Q. Is that because the manual instructs it or you just 23 believe that's good practice?</p> <p>24 A. If we're examining the same exhibit, on the right-hand 25 side the bullet point says: Always have a fire</p>
<p style="text-align: right;">Page 118</p> <p>1 entrapment area, that in the general revealing of the 2 SCR canister by removing the front cover does not 3 fully expose the entrapment areas, and with the 4 entanglement obstruction interaction with the 5 surrounding blanket may not readily clean from normal 6 cleaning methods, and there may have been a further 7 instruction, make sure you rake behind components, 8 make sure you evacuate this particular ash pit or 9 collection point to remove.</p> <p>10 So the truly crude example is when my wife 11 tells me to clean the house and I'm done, she starts 12 over and does a different type of cleaning.</p> <p>13 So when you say "clean the machine," 14 kitchen clean or operating theater clean? That 15 distinction is not here, and kitchen clean is removing 16 the chunks. So removing the chunks may be sufficient 17 for cleaning. That distinction is not offered in this 18 instruction.</p> <p>19 Q. And earlier I thought you were -- you testified that 20 you would not be offering any opinions as to the 21 sufficiency of the instructions or warnings. Was I 22 mistaken earlier or ...</p> <p>23 A. You were not mistaken earlier.</p> <p>24 Q. Okay.</p> <p>25 A. Though I've offered it here.</p>	<p style="text-align: right;">Page 120</p> <p>1 extinguisher on or near the machine.</p> <p>2 I believe that's good practice, and that's 3 sound farming practice.</p> <p>4 Q. Do you know if it had one on the machine?</p> <p>5 A. They did not.</p> <p>6 Q. Do you have an opinion regarding whether the operator 7 could have extinguished this fire if he had a fire 8 extinguisher with him?</p> <p>9 A. I believe the fire could have been extinguished.</p> <p>10 Q. In general, do fires that are burning debris as the 11 fuel, are they slow-progressing fires?</p> <p>12 A. Yes.</p> <p>13 Q. And slow relative to, say, a liquid-fueled fire, such 14 as gasoline or diesel?</p> <p>15 A. Yes.</p> <p>16 Q. And so that slowness provides the operator or a 17 witness more opportunity to extinguish if they have 18 the right equipment to do that?</p> <p>19 A. Yes.</p> <p>20 Q. Have you ever tried to clean a T8.390 behind the 21 SCR canister?</p> <p>22 A. No.</p> <p>23 Q. Do you know if it's possible to clean that area with 24 an air compressor and a wand?</p> <p>25 A. I do not.</p>

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<p style="text-align: right;">Page 121</p> <p>1 Q. Would you have to defer to an operator who actually</p> <p>2 operates that piece of equipment about whether it is</p> <p>3 possible to clean behind the SCR canister with an air</p> <p>4 compressor and wand?</p> <p>5 A. I would defer to a qualified condition, in that the</p> <p>6 operator may say, "This is how I clean the</p> <p>7 SCR canister or around it." I would then further</p> <p>8 examine, did that result in cleaning.</p> <p>9 Q. So if the operator says, "I'm able to clean around the</p> <p>10 SCR canister with an air compressor on a wand and I'm</p> <p>11 able to get all of the debris out," would you have any</p> <p>12 reason to doubt the operator?</p> <p>13 A. No.</p> <p>14 Q. And if an operator says that they can clean around the</p> <p>15 canister with a wand and are able to get all the</p> <p>16 debris out, would you agree that your criticism of the</p> <p>17 design at least to that operator would be moot?</p> <p>18 A. No, because within the same instruction it said that</p> <p>19 cleaning may be -- in this first paragraph: More</p> <p>20 frequent cleaning of your machine may be necessary,</p> <p>21 depending upon the operating environment and</p> <p>22 conditions.</p> <p>23 So they're offering once-per-day cleaning.</p> <p>24 If we are in a very debris-laden environment and</p> <p>25 there's continual collection within that compartment,</p>	<p style="text-align: right;">Page 123</p> <p>1 take to the field?</p> <p>2 A. I don't know.</p> <p>3 Q. Do you know if they had a wand that they could use in</p> <p>4 cleaning the SCR canister?</p> <p>5 A. I don't know.</p> <p>6 Q. Do you have any idea about whether Alfredo Barnal, the</p> <p>7 operator of this particular tractor, expressed any</p> <p>8 concern about cleaning this tractor?</p> <p>9 A. I don't know.</p> <p>10 Q. You don't know if he was able to clean around the</p> <p>11 SCR canister with an air compressor, do you?</p> <p>12 A. Obviously not. There's debris remaining.</p> <p>13 Q. Well, that may be a question of whether he did clean,</p> <p>14 but the question is whether he felt it was possible</p> <p>15 and easy to do; you don't know his opinion on that?</p> <p>16 A. I don't.</p> <p>17 Q. If he in fact testified that he was capable of</p> <p>18 cleaning completely around the SCR and removing the</p> <p>19 debris, would you agree that your criticism of the</p> <p>20 design is moot with respect to him?</p> <p>21 A. Can you repeat the question?</p> <p>22 Q. If Alfredo Barnal, the operator of this tractor, was</p> <p>23 in fact capable of cleaning around the SCR canister</p> <p>24 with an air compressor and a wand, would you agree</p> <p>25 that your criticism of the design is moot with respect</p>
<p style="text-align: right;">Page 122</p> <p>1 more frequent than daily cleaning may need to be</p> <p>2 performed, and I'm not clear that an operator always</p> <p>3 has an air compressor with him for each round of the</p> <p>4 field or half-hour of operation to completely clean</p> <p>5 the SCR canister confines. Where if a design has no</p> <p>6 floor in it and allows debris to freely fall away,</p> <p>7 this daily cleaning is perfectly sufficient, because</p> <p>8 as fast as it falls into that cavity, it's evacuated</p> <p>9 from the cavity. That is a very simple design</p> <p>10 approach.</p> <p>11 Q. And you would agree that the warning actually says to</p> <p>12 clean at least twice a day, right, at the beginning of</p> <p>13 the day, and -- let me rephrase it.</p> <p>14 At least once each day and at the end of</p> <p>15 the day, remove all trash and debris. Is that right?</p> <p>16 A. Yes.</p> <p>17 Q. So that's at least twice a day they require cleaning,</p> <p>18 or they instruct cleaning?</p> <p>19 A. They instruct cleaning.</p> <p>20 Q. And then if the circumstances or conditions</p> <p>21 necessitate more frequent cleaning, then that may need</p> <p>22 to take place during the day?</p> <p>23 A. Correct.</p> <p>24 Q. Okay. Do you know on this particular farm where this</p> <p>25 fire occurred if they had an air compressor they could</p>	<p style="text-align: right;">Page 124</p> <p>1 to Mr. Barnal?</p> <p>2 A. In the abstract, yes, but in the observation, again,</p> <p>3 there's still debris remaining. So whether he was</p> <p>4 capable, competent, or able to, it was not effective.</p> <p>5 Q. Or he didn't do it?</p> <p>6 A. Or he didn't do it.</p> <p>7 Q. So it doesn't necessarily mean the design is defective</p> <p>8 if he just didn't carry out what he said is fully</p> <p>9 possible and easy to do?</p> <p>10 A. Once again, the design, capturing and entrapping this</p> <p>11 material, could be readily addressed by having no</p> <p>12 floor immediately beneath it so there's no area for</p> <p>13 debris to fall and entrap, thus obviating the need for</p> <p>14 daily or more frequent cleaning.</p> <p>15 Q. You agree, it's impossible to design a piece of</p> <p>16 farming equipment that requires no cleaning, right?</p> <p>17 A. Of course.</p> <p>18 Q. So the operator still has to perform some cleaning</p> <p>19 functions, regardless of the design?</p> <p>20 A. Correct.</p> <p>21 Q. And a manufacturer can do everything in its power to</p> <p>22 eliminate the accumulation of debris, but if the</p> <p>23 operator doesn't do his or her part to clean, then</p> <p>24 there could still be potential fires?</p> <p>25 A. Correct.</p>

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<p style="text-align: right;">Page 125</p> <p>1 Q. Regardless of the manufacturer and regardless of the 2 design?</p> <p>3 A. Correct.</p> <p>4 Q. And maybe I'm just trying to understand your opinion. 5 Are you saying and testifying that regardless of 6 whether Alfredo was capable of cleaning around the 7 canister, it was a design defect to allow for the 8 accumulation to occur in the first place?</p> <p>9 A. Yes.</p> <p>10 Q. So in that circumstance, potentially, if he did not 11 clean, even though he said he could and said he was 12 capable, you believe that there are two causes of this 13 fire, is that correct? One being the design choice 14 and the other being Alfredo's failure to clean?</p> <p>15 A. The defects, I believe, relate to the entrapment area, 16 the area that is generally inaccessible, requiring a 17 wand of some nature to clear. But in that particular 18 fashion, you're cleaning blind. You're spraying 19 around an object that you can't see behind, and do you 20 know that that's adequately cleaned, sufficiently 21 cleaned, or nothing else is coming out. Because if 22 nothing else is coming out, that doesn't necessarily 23 mean that it's clean.</p> <p>24 And, once again, we have debris collected 25 beneath the SCR canister which was right in front --</p>	<p style="text-align: right;">Page 127</p> <p>1 Q. But you would agree that at least as to the debris 2 under the canister, he could have seen that by opening 3 the front panel, correct?</p> <p>4 A. Yes.</p> <p>5 Q. And so with an air compressor and a wand, he would 6 have been able to remove that debris from the 7 compressor regardless -- not the compressor, but the 8 canister, regardless of whether he could around the 9 back of it or not?</p> <p>10 A. I don't know.</p> <p>11 Q. You don't know if he could -- I'm sorry.</p> <p>12 A. In part, because the debris that's below the 13 SCR canister could have been compacted, compressed, 14 entangled in such a fashion that the example I would 15 use is you're trying to use the air wand to remove a 16 hay bale. I can remove sections of the bale, I can 17 blow holes in it, but I can't get it all out of there.</p> <p>18 So if I'm attacking this with a wand and 19 I'm spraying around the bottom of it, and suddenly 20 nothing else is coming out, an operator may interpret 21 that it's clean. They may not get down to see that in 22 fact they've got something compacted, that when they 23 attack it with a wand, they're actually wedging it in 24 there tighter.</p> <p>25 Q. Doesn't the operator have an obligation to at least</p>
<p style="text-align: right;">Page 126</p> <p>1 is visible by the operator to clean. So if he's 2 capable and able to clean that, why do I still have 3 debris collected immediately beneath the SCR canister. 4 It's confounding to me if simply wand cleaning is 5 capable of removing everything from that compartment.</p> <p>6 Q. Well, the fact that debris under the canister was 7 visible, doesn't that demonstrate that Alfredo didn't 8 actually clean around the canister? He didn't do it?</p> <p>9 A. We're back to the distinction, he got the chunks out, 10 is that sufficiently cleaned, but what does this clean 11 readily mean? Does it mean that you can wipe a white 12 glove in there and not collect anything?</p> <p>13 I'm not clear the level of cleanliness is 14 conveyed in this simple instruction other than 15 cleaned.</p> <p>16 Q. And I'm not asking for your criticisms of the 17 instructions.</p> <p>18 A. Correct.</p> <p>19 Q. What I'm talking about is you stated that because 20 there is debris that was located under the SCR after 21 the fire, that demonstrates that Alfredo was unable to 22 clean sufficiently.</p> <p>23 A. Yes.</p> <p>24 Q. That's the conclusion you've drawn, correct?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 128</p> <p>1 look in the visible areas to see if the cleaning is 2 working?</p> <p>3 A. So the visible areas, again, would be from where the 4 operator's standing. It doesn't say get on your hands 5 and knees. And this particular bottom of the 6 SCR canister and the top surface of the floor of the 7 fuel tank are very near ground level. So they're not 8 readily visible to the casual operator and they're not 9 visual to someone using a spray wand in that area.</p> <p>10 So it's, it's looking at your ankles. 11 That's about the area that we're talking about, is 12 midcalf, is about how high off the ground this happens 13 to be. And if you're operating with a spray wand, 14 viewing midcalf height or lower, I don't know that 15 that level of inspection is necessary for cleaning a 16 tractor.</p> <p>17 Q. Do you believe that the operator is capable of 18 cleaning over the transmission of the tractor?</p> <p>19 A. Yes.</p> <p>20 Q. Is that area shielded or concealed that would prevent 21 the operator from cleaning in any way?</p> <p>22 A. No.</p> <p>23 Q. Do you believe that the instructions that you've read 24 adequately instruct the operator to clean the 25 transmission area?</p>

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<p style="text-align: right;">Page 129</p> <p>1 A. Yes.</p> <p>2 Q. Do you know if Alfredo cleaned over the transmission?</p> <p>3 A. I don't know.</p> <p>4 Q. If the operator fails to follow the cleaning</p> <p>5 instructions at all, like they just don't even</p> <p>6 undertake cleaning at least twice a day, do you</p> <p>7 believe that's a violation of the cleaning</p> <p>8 instructions?</p> <p>9 A. Yes.</p> <p>10 Q. So the operator is not free to ignore the instructions</p> <p>11 if they want to?</p> <p>12 A. Can you repeat the question?</p> <p>13 Q. Let me rephrase it.</p> <p>14 In your opinion, you believe it would be</p> <p>15 inappropriate for an operator to disregard the</p> <p>16 instructions of the cleaning portions of the manual</p> <p>17 and undertake some other cleaning schedule that the</p> <p>18 operator feels is more appropriate?</p> <p>19 A. I would agree.</p> <p>20 Q. It would be inappropriate?</p> <p>21 A. It would be inappropriate.</p> <p>22 Q. Are there other non-visible areas of a T8.390 tractor</p> <p>23 that an operator needs to clean?</p> <p>24 A. Yes.</p> <p>25 Q. What are some examples?</p>	<p style="text-align: right;">Page 131</p> <p>1 Q. Is it possible to do that?</p> <p>2 A. Obviously not.</p> <p>3 Q. Why is it obviously not?</p> <p>4 A. We still have debris entrapment beneath the</p> <p>5 SCR canister.</p> <p>6 Q. Well, you don't know whether Alfredo actually</p> <p>7 attempted to clean it, though, right?</p> <p>8 A. Correct.</p> <p>9 Q. So it's possible he just did not attempt to clean it,</p> <p>10 and that's why there's debris that's left accumulated</p> <p>11 there, correct?</p> <p>12 A. Correct, but I would assume that during the eighteen</p> <p>13 hundred hours of operation, it would have been cleaned</p> <p>14 at some point during its function.</p> <p>15 Q. So it is possible to clean it to get it all out?</p> <p>16 A. I'm not clear whether it is or not.</p> <p>17 Q. Okay. I thought you offered the opinion that it is</p> <p>18 not possible to clean it all out.</p> <p>19 A. Can you rephrase the question?</p> <p>20 Q. Sure. Is it possible to clean entirely around the</p> <p>21 SCR canister to get all the debris out?</p> <p>22 A. Yes.</p> <p>23 Q. The debris that was found after the fire, do you</p> <p>24 believe that debris had been accumulating in those</p> <p>25 areas since hour number one?</p>
<p style="text-align: right;">Page 130</p> <p>1 A. An example would be the air filter.</p> <p>2 Q. So they need to clean the air filter, even though they</p> <p>3 can't see an air filter?</p> <p>4 A. Correct.</p> <p>5 Q. And how do they clean the air filter?</p> <p>6 A. They would remove the access panel, the toolless wing</p> <p>7 nut, move the air cleaner, knock it out, and put it</p> <p>8 back.</p> <p>9 Q. And the air filter you're talking about is adjacent to</p> <p>10 the SCR system?</p> <p>11 A. Correct.</p> <p>12 Q. What about components in the engine; do they need to</p> <p>13 generally clean out debris that accumulates around the</p> <p>14 engine compartment?</p> <p>15 A. Yes.</p> <p>16 Q. And would there be components or areas of the engine</p> <p>17 compartment that the operator cannot visibly see?</p> <p>18 A. Yes.</p> <p>19 Q. Do you believe that's a defect, to have areas of the</p> <p>20 engine compartment that are not visible that need to</p> <p>21 be cleaned?</p> <p>22 A. No.</p> <p>23 Q. Do you know how long it takes to clean around the</p> <p>24 SCR canister sufficiently to get it all out?</p> <p>25 A. No.</p>	<p style="text-align: right;">Page 132</p> <p>1 A. No.</p> <p>2 Q. How long do you believe that debris had been</p> <p>3 accumulating around the SCR canister?</p> <p>4 A. At least a year.</p> <p>5 Q. And what's the basis for that?</p> <p>6 A. The crop debris that was there appeared to be somewhat</p> <p>7 fibrous in nature, spindly, and not matching the work</p> <p>8 that they were doing at the time, and the work they</p> <p>9 were doing at the time really wasn't generating crop</p> <p>10 debris.</p> <p>11 Q. So in the year preceding that day, at least that that</p> <p>12 debris was accumulating, why did it not catch fire</p> <p>13 before that day?</p> <p>14 A. The issue with the ignition event is not a rigid,</p> <p>15 well-identified function. The combination of the</p> <p>16 material that is in contact or available, the moisture</p> <p>17 content at the time, the amount of air circulation</p> <p>18 that's available, and any movement may all impact or</p> <p>19 affect how this is operating.</p> <p>20 One crude example would be in excavating a</p> <p>21 sand pile. As you move material away, further away,</p> <p>22 further away, you reach a point where it cascades and</p> <p>23 falls down. There's the entire possibility that we</p> <p>24 have some debris lodged within there, that the tractor</p> <p>25 hit a bump and now we have a big clot of organic</p>

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<p style="text-align: right;">Page 133</p> <p>1 debris that suddenly falls against the side of the</p> <p>2 canister. So I have a large surface area now</p> <p>3 accepting heat from the canister to cause an ignition.</p> <p>4 Another condition may be a smolder</p> <p>5 ignition, where I've got something in close proximity,</p> <p>6 not exactly touching, and tends to carbonize, becomes</p> <p>7 darkened, singed, charred appearing. Though that's</p> <p>8 not a fire, it shows we have temperatures sufficient</p> <p>9 to cause local ignition.</p> <p>10 So we didn't have enough heat flux or</p> <p>11 temperature at that time to cause continued ignition,</p> <p>12 but there's evidence of a burning area. So I have to</p> <p>13 have some either dislodgement or contact that's to be</p> <p>14 made in that immediate area due to some falling,</p> <p>15 movement, shifting, hitting a bump, where the material</p> <p>16 suddenly falls within that area and contacts the</p> <p>17 SCR canister. That's an explanation of why it</p> <p>18 happened then and not previously.</p> <p>19 The other is the debris that's immediately</p> <p>20 beneath the SCR canister is somewhat starved for</p> <p>21 oxygen, in that the area immediately in the center,</p> <p>22 there's no air circulation to that center area. It's</p> <p>23 all around the edges. And around the edges we've got</p> <p>24 airflow, natural draft around the SCR canister going</p> <p>25 upward, so I have a lot of heat release, evacuation</p>	<p style="text-align: right;">Page 135</p> <p>1 A. I would agree.</p> <p>2 Q. And you would agree, though, that debris had been</p> <p>3 accumulating the entire time?</p> <p>4 A. Yes.</p> <p>5 Q. And that debris would have been dry corn and crop</p> <p>6 material, correct?</p> <p>7 A. From time to time, yes.</p> <p>8 Q. So at least that condition would have been present at</p> <p>9 various times, the presence of crop debris?</p> <p>10 A. Yes.</p> <p>11 Q. Only when they cleaned it out completely would the</p> <p>12 crop debris have been gone, but otherwise there would</p> <p>13 have been crop debris present in the vicinity of the</p> <p>14 SCR canister?</p> <p>15 A. Yes.</p> <p>16 Q. Was there anything unusual about that particular day</p> <p>17 where it was excessively hot as compared to any other</p> <p>18 day that they had used it during the summer?</p> <p>19 A. Not to my knowledge.</p> <p>20 Q. Was there anything unusual about the humidity levels</p> <p>21 to where it was excessively dry in comparison to other</p> <p>22 days that they had used the tractor?</p> <p>23 A. Not to my knowledge.</p> <p>24 Q. Was there anything in particular that was different</p> <p>25 that day, such that the moisture content of the crop</p>
<p style="text-align: right;">Page 134</p> <p>1 from that area by the sweeping flow of air around it.</p> <p>2 So what's immediately beneath it is really</p> <p>3 not at risk of starting a fire, though it is a hazard.</p> <p>4 Q. But you don't believe the fire started immediately</p> <p>5 beneath --</p> <p>6 A. I do not.</p> <p>7 Q. -- the SCR canister?</p> <p>8 A. I do not, which would explain why I can have debris</p> <p>9 accumulate for a period of time and not start a fire</p> <p>10 there.</p> <p>11 Q. Because there's not enough oxygen?</p> <p>12 A. There's a combination of oxygen, heat flux, and</p> <p>13 airflow.</p> <p>14 Q. Is it your opinion that this combination of variables</p> <p>15 that lead to a fire would not have occurred in the</p> <p>16 1802 hours of operation before the fire actually</p> <p>17 happened?</p> <p>18 A. Can you repeat the question?</p> <p>19 Q. Sure. This tractor had been in operation for 1802</p> <p>20 hours before the fire, is that correct?</p> <p>21 A. Yes.</p> <p>22 Q. Is it your opinion that the combination of variables</p> <p>23 that allowed the fire to happen on that particular</p> <p>24 day, that combination would not have existed at any</p> <p>25 point during the 1802 hours before then?</p>	<p style="text-align: right;">Page 136</p> <p>1 debris was lower than it had been on any other day?</p> <p>2 A. Not to my knowledge.</p> <p>3 Q. Is the basis for your opinion that the perfect storm</p> <p>4 of variables came together on that day only, is the</p> <p>5 basis for that the fact that there just had not been a</p> <p>6 fire before that day?</p> <p>7 A. Yes.</p> <p>8 Q. Is there anything else?</p> <p>9 A. No.</p> <p>10 Let me offer, returning to your comment</p> <p>11 earlier about a defect, and you used the example of a</p> <p>12 taillight; a taillight being defective doesn't affect</p> <p>13 an engine fire. But a defect being present doesn't</p> <p>14 mean that the hazard or failure will continue or occur</p> <p>15 immediately. That defect can be present and is only</p> <p>16 exercised at some point in the service life.</p> <p>17 Q. Sure, I understand that. And the defect's present and</p> <p>18 then it manifests at some later date?</p> <p>19 A. Correct.</p> <p>20 Q. Although it may be present the whole time?</p> <p>21 A. Correct.</p> <p>22 Q. Okay. And so what you're describing, though, is that</p> <p>23 it didn't manifest until these other variables came</p> <p>24 together on that particular day, right?</p> <p>25 A. Correct.</p>

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<p style="text-align: right;">Page 137</p> <p>1 Q. And I guess my question is, can you say, without 2 relying on the occurrence of the fire, can you say 3 that those variables did not come together at any 4 other day previously?</p> <p>5 A. No.</p> <p>6 Q. The only way you can say they didn't come together is 7 because there was no fire, is that correct?</p> <p>8 A. Correct.</p> <p>9 Q. Do you know if -- well, do you know what activity they 10 were actually undertaking that day?</p> <p>11 A. It looked like they were field cultivating.</p> <p>12 Q. Is that an activity that they had done previously with 13 that tractor?</p> <p>14 A. I don't know.</p> <p>15 Q. You don't have any reason to believe that was a unique 16 activity that they had only done that day?</p> <p>17 A. No.</p> <p>18 Q. Do you know anything about the operation of the 19 tractor during the day, like, for instance, what level 20 of RPMs they would have to operate at to do that 21 cultivating?</p> <p>22 A. No.</p> <p>23 Q. You don't know whether it's high or low or average?</p> <p>24 A. It's high. You've got stuff stuck way in the ground, 25 yeah, and you're pulling hard.</p>	<p style="text-align: right;">Page 139</p> <p>1 A. No.</p> <p>2 Q. For instance, in shifting from Tier 4A to Tier 4B, did 3 the equipment have to operate hotter?</p> <p>4 A. I don't know.</p> <p>5 Q. You made a reference to the change or difference 6 between the model involved in this fire and then later 7 models that had a different design. What are the 8 changes that you think are of note?</p> <p>9 A. The exhaust is not routed through a compartment 10 surrounded by a plastic fuel tank.</p> <p>11 Q. Okay. But again, the plastic fuel tank itself, the 12 fact that it's a fuel tank is irrelevant to your 13 opinion as to causation of this fire. It's really 14 just that there is a surface against which debris will 15 accumulate next to the canister. Is that correct?</p> <p>16 A. There's a surface in which the debris will collect 17 next to the canister in which the surface had special 18 protection included, as well, that aggravates the 19 collection, the blanket, consuming the two-inch air 20 gap that's available.</p> <p>21 So the insulation blanket consumes that 22 available air gap to allow a lesser amount of debris 23 collecting to form a greater depth or greater hazard.</p> <p>24 The alteration appears to be removing the 25 SCR canister from the side board of the vehicle,</p>
<p style="text-align: right;">Page 138</p> <p>1 Q. Okay, so it's a relatively high RPM level?</p> <p>2 A. It's a high RPM level, high load.</p> <p>3 Q. Is it true that the cultivating of a field does not 4 generate that much debris?</p> <p>5 A. Yes.</p> <p>6 Q. And other tasks such as chopping silage would generate 7 more debris than cultivating a field?</p> <p>8 A. Yes.</p> <p>9 Q. Do you know what level of testing CNH does before it 10 releases a new product to the market?</p> <p>11 A. No.</p> <p>12 Q. Do you know if CNH has farms where they actually 13 operate these tractors in various capacities before 14 they're released to the public?</p> <p>15 A. I don't know.</p> <p>16 Q. If you can turn to your actual report, I'd like to go 17 through some of the comments.</p> <p>18 You reference the difference -- or the fact 19 that Tier 4A was introduced in 2011. What changed 20 between Tier 4A and Tier 4B as to the emission 21 standard itself?</p> <p>22 A. I don't know.</p> <p>23 Q. Do you know what effect those changes had on the 24 operating capacity or specifications of combustion 25 engines?</p>	<p style="text-align: right;">Page 140</p> <p>1 passenger side, up on to the engine compartment under 2 the hood, which is a dramatic movement, relocation, or 3 different SCR cannisters could certainly sit where the 4 original SCR canister is sitting for the Tier 4A 5 configuration.</p> <p>6 Q. You had several schematics that showed a different 7 design. I believe we were looking earlier at 8 Exhibit 29. Does this show the different design that 9 you're talking about?</p> <p>10 A. Yes.</p> <p>11 Q. So Exhibit 29, and it has -- the SCR canister is still 12 on the passenger side of the tractor, is that correct?</p> <p>13 A. No.</p> <p>14 Q. Where is the SCR canister?</p> <p>15 A. The SCR canister is under the hood.</p> <p>16 Q. So what we're seeing here is the exhaust itself?</p> <p>17 A. Is the muffler, correct.</p> <p>18 Q. Muffler, okay.</p> <p>19 A. Also of note, the air intake on this Genesis T8 model 20 is on the driver's side left, where on the T8.390 21 we're talking about, it's on the passenger side right.</p> <p>22 Q. And why does that --</p> <p>23 A. You're asking about differences in the assembly and 24 arrangement.</p> <p>25 Q. Do you believe that difference, having the air intake</p>

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<p style="text-align: right;">Page 141</p> <p>1 on the left as opposed to the right, would have made a</p> <p>2 difference in this case?</p> <p>3 A. No.</p> <p>4 Q. Do you believe that having the SCR canister under the</p> <p>5 hood would have made a difference in this case?</p> <p>6 A. Yes.</p> <p>7 Q. If it's under the hood, it still would need to be</p> <p>8 encapsulated in some type of protective shielding, is</p> <p>9 that correct?</p> <p>10 A. It's under the hood.</p> <p>11 Q. So the hood would create that shielding in some ways?</p> <p>12 A. So let's offer the crude example where previously the</p> <p>13 SCR canister was situated where an umbrella was</p> <p>14 upside-down beneath the SCR canister, where now if I</p> <p>15 place it under the hood, the umbrella is upright and</p> <p>16 protecting the SCR canister.</p> <p>17 So that relocation serves two purposes. It</p> <p>18 removes it from a potentially-hazardous location, from</p> <p>19 a fault in the plastic fuel tank surrounding it,</p> <p>20 causing a fuel-fed fire, and provides it protection</p> <p>21 under the hood that's already existed there. So I</p> <p>22 don't have to design a separate shield for it. It</p> <p>23 falls within the tractor hood.</p> <p>24 Q. Now, the umbrella analogy, though, is a little</p> <p>25 incomplete, right? Because the design involved in</p>	<p style="text-align: right;">Page 143</p> <p>1 or other half of the egg.</p> <p>2 So I have a different situation, where</p> <p>3 placing it in the hood area, anything that would</p> <p>4 precipitate on to that can fall away freely and out</p> <p>5 into the engine compartment, where in the design that</p> <p>6 we have here, surrounded in this entrapment area</p> <p>7 around the fuel tank area, stuff that falls in through</p> <p>8 these small openings can accumulate, entrap, and still</p> <p>9 not fall through the floor.</p> <p>10 Q. Do you know why the openings are there on top of the</p> <p>11 SCR canister?</p> <p>12 A. In part, for ventilation; in part, for thermal</p> <p>13 expansion.</p> <p>14 Q. So you've offered the opinion that that was a</p> <p>15 defective design that should not have had those</p> <p>16 openings, is that correct?</p> <p>17 A. No.</p> <p>18 Q. Okay. So you don't have an opinion whether it should</p> <p>19 or should not have the openings?</p> <p>20 A. I don't have an opinion.</p> <p>21 Q. The design defect opinion is that that area allows for</p> <p>22 entrapment --</p> <p>23 A. Correct.</p> <p>24 Q. -- next to the canister and the blanket on the fuel</p> <p>25 tank?</p>
<p style="text-align: right;">Page 142</p> <p>1 this fire, there was a top on the shield, as well,</p> <p>2 correct? There was a top cover of the SCR canister,</p> <p>3 correct?</p> <p>4 A. There was a cover that was not completely encompassing</p> <p>5 the openings, correct.</p> <p>6 Q. It had some vents in it, right?</p> <p>7 A. It had openings.</p> <p>8 Q. Openings. So you've described basically the bottom</p> <p>9 half of an egg, an umbrella upside-down, but in</p> <p>10 reality it had the top half of the egg, too, with some</p> <p>11 openings?</p> <p>12 A. Offering that same example, crop debris precipitates.</p> <p>13 Crop debris falls. Crop debris doesn't float, doesn't</p> <p>14 accumulate by static electricity in this particular</p> <p>15 case.</p> <p>16 So if I have a tractor traveling through</p> <p>17 the field in a cloud of farm debris, crop debris, and</p> <p>18 it's precipitating, falling on to the umbrella over</p> <p>19 the engine compartment, anything that falls down will</p> <p>20 fall down and away from the SCR canister because it's</p> <p>21 protected.</p> <p>22 In the case of our incomplete egg now, if I</p> <p>23 do have a gap, I do have an opening which does exist</p> <p>24 in that area, whatever precipitates into that opening</p> <p>25 can fall and collect on now the upside-down umbrella</p>	<p style="text-align: right;">Page 144</p> <p>1 A. Correct.</p> <p>2 Q. Do you know if debris can accumulate on the</p> <p>3 SCR canister in the new design?</p> <p>4 A. I do not know.</p> <p>5 Q. Do you have an opinion as to whether the SCR canister</p> <p>6 needs to be cleaned even with the new design?</p> <p>7 A. I don't have an opinion.</p> <p>8 Q. Do you know if all 360-degree surfaces of the canister</p> <p>9 are visible from an operator who's trying to clean the</p> <p>10 canister in its current design?</p> <p>11 A. They are not.</p> <p>12 Q. And what portions are not visible?</p> <p>13 A. Can I refer to this exhibit?</p> <p>14 Q. This one?</p> <p>15 A. Exhibit Number 36, as we view this exhibit --</p> <p>16 Q. Let me back up. I was asking about the current</p> <p>17 design, and the picture you've got is the old design.</p> <p>18 A. I'm sorry.</p> <p>19 Q. That's okay. I just wanted to make sure we're talking</p> <p>20 about the same thing.</p> <p>21 So on the current design, do you know if</p> <p>22 all 360 degrees are visible from an operator trying to</p> <p>23 clean the SCR canister?</p> <p>24 A. I do not know.</p> <p>25 Q. Do you know if the design that you've described with</p>

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<p style="text-align: right;">Page 145</p> <p>1 the canister in the engine compartment would have been</p> <p>2 feasible and compatible with a Tier 4A emission</p> <p>3 standard?</p> <p>4 A. The arrangement and location of the SCR canister under</p> <p>5 the tractor hood would have been an option available</p> <p>6 at the time production occurred.</p> <p>7 Q. Have you -- when you say it was an option that was</p> <p>8 available, what do you mean?</p> <p>9 A. The canister and its function does not require a</p> <p>10 particular orientation, up/down/left/right. The</p> <p>11 canister can operate from the exhaust flow in any</p> <p>12 location surrounding the tractor, whether it's on top</p> <p>13 of a cab, whether it's in front of the radiator,</p> <p>14 whether it's to either side of the vehicle. It's a</p> <p>15 matter of routing exhaust from the engine through to</p> <p>16 the SCR canister.</p> <p>17 So the ability to place it within the</p> <p>18 confines of the hood is an option available at the</p> <p>19 time the tractor was constructed/designed/developed.</p> <p>20 The issue is they're dealing with an SCR</p> <p>21 canister that is a commercial production item</p> <p>22 available for use in other equipment. So the</p> <p>23 configuration/size/shape may not be to the</p> <p>24 manufacturer's liking, which later on as they</p> <p>25 developed Tier 4, they may be able to have a different</p>	<p style="text-align: right;">Page 147</p> <p>1 that tank, is that correct?</p> <p>2 A. Yes.</p> <p>3 Q. And that larger tank could cause you to move other</p> <p>4 components to other locations to allow for the larger</p> <p>5 tank?</p> <p>6 A. Yes.</p> <p>7 Q. That front shield that is on the SCR canister on the</p> <p>8 T8.390, the one that can be removed, do you know how</p> <p>9 it's actually removed?</p> <p>10 A. It's secured by Allen head screws into captive nuts.</p> <p>11 Q. Do you know how many screws?</p> <p>12 A. I do not recall.</p> <p>13 Q. Do you have an opinion as to whether it is difficult</p> <p>14 to remove that shield?</p> <p>15 MR. CORETTI: Compared to what?</p> <p>16 A. With the aid of tools, it's not difficult to remove.</p> <p>17 BY MR. ROBINSON:</p> <p>18 Q. So if the operator has an Allen wrench, they can</p> <p>19 remove those bolts and take the shield off?</p> <p>20 A. Yes.</p> <p>21 Q. Do you believe that in the context of designing</p> <p>22 farming equipment, CNH should have made it easier to</p> <p>23 remove that shield than what it was?</p> <p>24 A. I would believe so.</p> <p>25 Q. You think they should have made it easier?</p>
<p style="text-align: right;">Page 146</p> <p>1 configuration that fits more suitably within the</p> <p>2 engine compartment hood.</p> <p>3 Q. Do you know if the fuel tank on the model tractor</p> <p>4 exhibited in Exhibit 29 is the same or different than</p> <p>5 the T8.390?</p> <p>6 A. It is different.</p> <p>7 Q. How much different?</p> <p>8 A. In the particular case of the passenger side, there's</p> <p>9 no opening, there's no cavity for the SCR canister to</p> <p>10 reside within.</p> <p>11 Q. That was a poor question. I was just talking about</p> <p>12 capacity. Do you know how many gallons fit in the</p> <p>13 fuel tank for the current model of the design that</p> <p>14 you've referenced?</p> <p>15 A. The Genesis T8?</p> <p>16 Q. Yeah, T8 Genesis.</p> <p>17 A. I do not.</p> <p>18 Q. Do you know how many gallons fit in the T8.390 fuel</p> <p>19 tank?</p> <p>20 A. I do not.</p> <p>21 Q. Do you think that is a factor that might impact the</p> <p>22 configuration of the fuel tank in reference to other</p> <p>23 components of the tractor.</p> <p>24 A. It could.</p> <p>25 Q. So if you need a larger tank, you need more space for</p>	<p style="text-align: right;">Page 148</p> <p>1 A. Yes.</p> <p>2 Q. And if the operator of this tractor said, "It was not</p> <p>3 difficult for me to remove those bolts," would that</p> <p>4 change your opinion?</p> <p>5 MR. CORETTI: Form of the question.</p> <p>6 A. No.</p> <p>7 BY MR. ROBINSON:</p> <p>8 Q. And why is that?</p> <p>9 A. From operating equipment in this fashion and also</p> <p>10 observing other people, if there are areas that need</p> <p>11 ready cleaning or access, it's more common to have</p> <p>12 toolless connections, interconnections, buckles,</p> <p>13 overcenter levers, captive wing nuts, things of that</p> <p>14 nature, so that the operator can readily exit the</p> <p>15 tractor, open a compartment, examine something, put it</p> <p>16 back together, without the benefit of an Allen wrench,</p> <p>17 a crescent wrench, a socket wrench, an impact driver,</p> <p>18 a screwdriver, a flashlight, and a pair of pliers.</p> <p>19 Q. Okay. Did this operator need all of those tools to</p> <p>20 remove the shield from the canister?</p> <p>21 A. No.</p> <p>22 Q. Only needed the Allen wrench, right?</p> <p>23 A. Correct.</p> <p>24 Q. And if they had the Allen wrench, they could remove</p> <p>25 the bolts just as easily as if they were wing nuts, is</p>

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<p style="text-align: right;">Page 149</p> <p>1 that right?</p> <p>2 A. Correct.</p> <p>3 Q. Do you know if the operator of this particular tractor</p> <p>4 kept an Allen wrench in the tractor?</p> <p>5 A. I do not know.</p> <p>6 (Off the record at 1:49 p.m.)</p> <p>7 (Back on the record at 1:52 p.m.)</p> <p>8 BY MR. ROBINSON:</p> <p>9 Q. Given that you have not actually cleaned a T8.390</p> <p>10 around the SCR canister, would you have to defer to an</p> <p>11 operator who actually does it as to whether it is</p> <p>12 difficult to accomplish?</p> <p>13 A. Yes.</p> <p>14 Q. And given that you haven't cleaned around an SCR</p> <p>15 canister of a T8.390, would you have to defer to an</p> <p>16 operator who actually cleans as to whether it takes a</p> <p>17 long time, such that it would prevent the operator</p> <p>18 from cleaning according to the manual instructions?</p> <p>19 A. Yes.</p> <p>20 Q. And if an operator said that he can clean the area</p> <p>21 around the SCR canister and remove all of the debris,</p> <p>22 you would have to agree with the operator?</p> <p>23 A. I would have to agree with the operator's</p> <p>24 interpretation that he's removed all the debris.</p> <p>25 Q. You have a paragraph in your report that describes the</p>	<p style="text-align: right;">Page 151</p> <p>1 the exhaust stream that leaves.</p> <p>2 Q. Do you know or have you evaluated how other</p> <p>3 manufacturers comply with the EPA emission standards?</p> <p>4 A. No.</p> <p>5 Q. Do you know whether CNH's use of this particular</p> <p>6 system is consistent with other manufacturers's design</p> <p>7 options?</p> <p>8 A. It is a more common system in use from other</p> <p>9 manufacturers, where they're injecting urea.</p> <p>10 Q. So CNH's system is common to what other manufacturers</p> <p>11 do?</p> <p>12 A. Yes.</p> <p>13 Q. Do you know how hot the skin temperature of the T8.390</p> <p>14 is at the location where the origin of the fire is, in</p> <p>15 your opinion?</p> <p>16 A. No.</p> <p>17 Q. Do you know, generally, what temperatures the outside</p> <p>18 skin surface of the SCR canister reach?</p> <p>19 A. No.</p> <p>20 Q. Would you agree that the skin surface temperature of</p> <p>21 the canister, and including a factor for the -- I'm</p> <p>22 sorry, the reflective --</p> <p>23 A. Radiant.</p> <p>24 Q. Radiant. I'm sorry, let me restart.</p> <p>25 Would you agree that the skin temperature</p>
<p style="text-align: right;">Page 150</p> <p>1 EPA standards and the inclusion of selective catalytic</p> <p>2 reduction systems in order to comply with those</p> <p>3 standards. Do you see that paragraph?</p> <p>4 A. Yes.</p> <p>5 Q. This applies to every manufacturer, right?</p> <p>6 A. Yes.</p> <p>7 Q. And the process of reducing emissions, does that</p> <p>8 necessarily involve elevating temperatures of an</p> <p>9 exhaust, if you know?</p> <p>10 A. There are methods that do use elevation of</p> <p>11 temperatures, there are other methods that use</p> <p>12 entrapment, but during some of those entrapment</p> <p>13 systems, they do also elevate the temperature</p> <p>14 cyclically.</p> <p>15 Q. Okay. What does CNH's design do?</p> <p>16 A. What this does is this introduces a urea formulation</p> <p>17 into the exhaust stream to form the reduction of</p> <p>18 nitrous oxides.</p> <p>19 Q. So what does it do relative to temperature?</p> <p>20 A. So it is an exothermic reaction. It evolves heat, it</p> <p>21 gives off heat.</p> <p>22 Q. It creates more heat?</p> <p>23 A. That's an exothermic reaction; evolves heat, creates</p> <p>24 heat. So very similar to the catalytic converter on a</p> <p>25 vehicle, the exhaust stream that enters is cooler than</p>	<p style="text-align: right;">Page 152</p> <p>1 of the canister combined with some factor for the</p> <p>2 radiant increase in temperature would have to exceed</p> <p>3 the ignition point of the crop debris for it to</p> <p>4 ignite?</p> <p>5 A. Yes.</p> <p>6 Q. So to determine if the heat from the canister actually</p> <p>7 ignited the debris, you need to understand, generally,</p> <p>8 what the temperature of the skin of this canister is?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. Have you gathered any information to generally</p> <p>11 understand what that temperature is?</p> <p>12 A. No.</p> <p>13 Q. So what is the basis for your conclusion that the heat</p> <p>14 from the canister did in fact ignite the debris that</p> <p>15 was adjacent to it?</p> <p>16 A. Okay. The example of not only the exemplar tractor --</p> <p>17 pardon me, the tractor, subject tractor, there were</p> <p>18 two exemplar tractors that were examined by</p> <p>19 Mr. Wilson, one of which was involved in a fire and</p> <p>20 another one in which a fire was discovered and</p> <p>21 arrested, as well as the sample tractor, I believe,</p> <p>22 that was at Burnips dealership, where there was crop</p> <p>23 debris in and around the SCR canister, which was</p> <p>24 charred or discolored but not -- had not developed to</p> <p>25 a full combustion condition.</p>

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<p style="text-align: right;">Page 153</p> <p>1 So in four cases, four different tractors</p> <p>2 of a similar configuration of the SCR canister</p> <p>3 surrounded by a plastic fuel tank with a shrouding</p> <p>4 insulated blanket, we have cellulosic material that is</p> <p>5 either discolored from overtemperature, has contacted</p> <p>6 the SCR canister, burned as an ember, ran out of fuel</p> <p>7 and oxygen, and just simply extinguished itself, or</p> <p>8 resulted in fuel-fledged combustion and consuming the</p> <p>9 tank, the fuel, and the tractor itself.</p> <p>10 So from four examples we have not only the</p> <p>11 full-blown fire, but we have evidence of other items</p> <p>12 in the immediate area that have discolored from</p> <p>13 overheating.</p> <p>14 So whether the temperature is 400, 500,</p> <p>15 600, or 800, is not the greater issue here, is we're</p> <p>16 above the ignition temperature at the surface, and</p> <p>17 further, the canister, like a muffler, has a thermo</p> <p>18 characteristic, where once you're at a steady state,</p> <p>19 it's rejecting heat as rapidly as it's assuming heat.</p> <p>20 So at idle let's say it's 300 C, okay? We</p> <p>21 go into the field to work, maybe it gets up to 400 C.</p> <p>22 So in that particular case, at idle we might have</p> <p>23 something that's touching the surface and simply</p> <p>24 smoldering, and once we get into the field, we have a</p> <p>25 further separation, and though that would have started</p>	<p style="text-align: right;">Page 155</p> <p>1 A. Correct.</p> <p>2 Q. And the fact that a fire occurred doesn't mean that</p> <p>3 the SCR canister provided the heat to ignite debris,</p> <p>4 correct?</p> <p>5 A. Correct.</p> <p>6 Q. Okay. So this fire does not prove that the canister</p> <p>7 can provide sufficient heat to ignite debris, is that</p> <p>8 correct?</p> <p>9 A. No.</p> <p>10 Q. It's not correct?</p> <p>11 A. This doesn't prove it. This fire does not prove that.</p> <p>12 That hypothesis is unproven.</p> <p>13 Q. Okay. So we were talking about there were four, you</p> <p>14 said there were four fires that give you the evidence</p> <p>15 you need to establish that the canister can provide</p> <p>16 sufficient heat to ignite debris.</p> <p>17 A. Correct.</p> <p>18 Q. One was the fire involved in this case, which you just</p> <p>19 said that alone can't be evidence to establish your</p> <p>20 causation theory, correct?</p> <p>21 A. Correct.</p> <p>22 Q. You mentioned another fire on another piece of</p> <p>23 equipment that I believe Mr. Wilson investigated. Is</p> <p>24 that right?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 154</p> <p>1 a fire, it's not contacting the SCR canister.</p> <p>2 So back to the temperature at which this</p> <p>3 occurs, if we're above 450 F, roughly, that's the</p> <p>4 common combustion temperature for cellulosic material,</p> <p>5 wood, that can ignite, and if there's sufficient fuel</p> <p>6 around there, that can foster into full-fledged</p> <p>7 combustion of fire.</p> <p>8 So the issue is, is it at 300, is it 330,</p> <p>9 is it 375. What happens is we have a combustion -- a</p> <p>10 heat-gaining exothermic reaction within there that</p> <p>11 begins proper operation around 200 C, which is close</p> <p>12 to the ignition temperature of wood. Now, the tractor</p> <p>13 has to operate under load, which is a greater thermal</p> <p>14 load on it, and we're injecting more and more urea.</p> <p>15 So we have a greater heat output from this area.</p> <p>16 So that temperature's dynamic, you really</p> <p>17 can't say what it is, but I know it's above a</p> <p>18 threshold, because I'm singeing things, I'm charring</p> <p>19 things, and there's a fire that occurs.</p> <p>20 Q. Let's try to break down what you said. So, first of</p> <p>21 all, you mentioned four fires. One of them is this</p> <p>22 fire, right?</p> <p>23 A. Correct.</p> <p>24 Q. And we've already talked about how the fact that a</p> <p>25 fire occurred does not mean that there's a defect?</p>	<p style="text-align: right;">Page 156</p> <p>1 Q. Do you know the name of that farm where that happened?</p> <p>2 A. Not offhand. My recollection from the fire event is</p> <p>3 that the farmer did remove the cover physically,</p> <p>4 without the aid of tools, to expose the area involved</p> <p>5 in fire and extinguish the fire before consuming the</p> <p>6 tractor.</p> <p>7 Q. So that --</p> <p>8 A. That fire was discovered in progress in the debris</p> <p>9 surrounding the SCR canister, and the farmer, without</p> <p>10 the aid of tools, tore the cover off the compartment</p> <p>11 to use a fire extinguisher to put the fire out, and</p> <p>12 that tractor then was further modified to completely</p> <p>13 remove the fuel tank from surrounding the SCR canister</p> <p>14 and remove that collection point.</p> <p>15 Q. Okay, so that fire --</p> <p>16 A. That is a second fire.</p> <p>17 Q. And I believe that is called the Heartland Dairies</p> <p>18 fire, is that correct?</p> <p>19 A. I will accept that.</p> <p>20 MR. CORETTI: Hoffland.</p> <p>21 MR. ROBINSON: What is it?</p> <p>22 MR. CORETTI: Hoffland.</p> <p>23 MR. ROBINSON: Hoffland, I'm sorry.</p> <p>24 BY MR. ROBINSON:</p> <p>25 Q. Hoffland, does that sound familiar?</p>

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<p style="text-align: right;">Page 157</p> <p>1 A. Yes.</p> <p>2 Q. And I believe you've seen pictures from that fire, is</p> <p>3 that correct?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. Let me ask you about that. The operator gets</p> <p>6 off the tractor and observes a fire that he removes</p> <p>7 the shield and he's able to extinguish in that area,</p> <p>8 correct?</p> <p>9 A. Yes.</p> <p>10 Q. How do you know that the canister -- the heat from the</p> <p>11 canister caused that fire?</p> <p>12 A. I did not investigate that fire, so I can't say a</p> <p>13 truly determining cause. However, as leaving the</p> <p>14 factory, there should be nothing combustible in that</p> <p>15 area. As leaving the factory and looking at parts</p> <p>16 diagrams, there are no electrical components that</p> <p>17 travel through that cavity.</p> <p>18 Another possibility exists, though I don't</p> <p>19 know, whether in fact the insulation blanket was</p> <p>20 defective/malformed/improperly installed that caused a</p> <p>21 further issue. I don't know that. Which would have</p> <p>22 voided the design intent but created an assembly</p> <p>23 defect.</p> <p>24 The fuel present is crop debris. Crop</p> <p>25 debris was on fire. Within that compartment, what is</p>	<p style="text-align: right;">Page 159</p> <p>1 canister, is that correct?</p> <p>2 A. Correct.</p> <p>3 Q. And because you can't explain it any other way, you've</p> <p>4 concluded that it had to be heat transfer that caused</p> <p>5 that fire?</p> <p>6 A. Yes.</p> <p>7 Q. But again, the inability to explain a fire any other</p> <p>8 way is not evidence itself of heat transfer actually</p> <p>9 causing a fire, correct? You still have to show</p> <p>10 independent evidence that the canister reaches</p> <p>11 temperatures sufficient to ignite the debris, correct?</p> <p>12 A. Can you repeat the question?</p> <p>13 Q. Sure. You mentioned multiple other options, like a</p> <p>14 potential electrical fire, you talked about maybe a</p> <p>15 manufacturing defect involved in the insulating</p> <p>16 blanket, and you stated that you can't explain the</p> <p>17 presence of the fire in the Hoffland Farms case any</p> <p>18 other way except heat transfer from the canister to</p> <p>19 the debris. Is that right?</p> <p>20 A. Yes.</p> <p>21 Q. But we already agreed that the inability to explain a</p> <p>22 fire any other way is not, in and of itself,</p> <p>23 scientific evidence that a particular cause actually</p> <p>24 led to a fire. Right?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 158</p> <p>1 capable of adding heat to the crop debris, it's not</p> <p>2 the plastic fuel tank, it's not the fuel in the tank,</p> <p>3 it's not the blanket. None of those are active</p> <p>4 components. The next logical and associated object is</p> <p>5 the SCR canister, which has an exothermic,</p> <p>6 heat-rejecting operation occurring within it.</p> <p>7 So that, that is now proximity. So I have</p> <p>8 a fire that's consumed one tractor. I have a fire</p> <p>9 that's discovered in proximity. So we have two</p> <p>10 fires --</p> <p>11 Q. Well, let's hold on for a second. We just talked</p> <p>12 about how the fact that a fire occurred on this</p> <p>13 tractor does not by itself prove that the canister</p> <p>14 gets hot enough to ignite debris, right?</p> <p>15 A. Correct.</p> <p>16 Q. And that's the only question we're talking about right</p> <p>17 now, is can the canister get hot enough to ignite</p> <p>18 debris.</p> <p>19 A. Yes.</p> <p>20 Q. So the fire on the New Flevo Dairy tractor does not</p> <p>21 prove that, correct?</p> <p>22 A. Correct.</p> <p>23 Q. It sounds like you're saying on the Hoffland Farms</p> <p>24 fire, that you can't explain the ignition of that crop</p> <p>25 debris any other way except heat transfer from the</p>	<p style="text-align: right;">Page 160</p> <p>1 Q. You still have to have independent evidence that a</p> <p>2 cause of a fire is plausible and possible in this</p> <p>3 situation. Correct?</p> <p>4 A. Yes.</p> <p>5 Q. And so in this case, with heat transfer, you need to</p> <p>6 have independent evidence that the transfer -- that</p> <p>7 the surface itself can get hot enough to ignite</p> <p>8 debris. Is that right?</p> <p>9 A. Okay, yes.</p> <p>10 Q. And would you agree that the occurrence of the fire in</p> <p>11 Hoffland Dairy and the inability to explain that fire</p> <p>12 any other way is not independent evidence that the</p> <p>13 canister gets hot enough to ignite debris?</p> <p>14 A. I would agree.</p> <p>15 Q. Okay. So do you have any independent evidence to</p> <p>16 establish that the canister can get hot enough to</p> <p>17 ignite debris?</p> <p>18 A. Not until the next fire.</p> <p>19 Q. Okay. So what happened, what was the next fire?</p> <p>20 A. So a different vehicle, same configuration, which</p> <p>21 would be the Burnips vehicle, which is the loaner</p> <p>22 tractor, which did not have a fire but the SCR</p> <p>23 compartment was opened and crop debris in that</p> <p>24 immediate area in close proximity to the SCR canister</p> <p>25 was charred. Charring requires temperatures</p>

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1 sufficient to ignite. So now I have an independent,
2 extemporaneous physical artifact that says at some
3 point in time the temperature for this particular unit
4 was above the combustion temperature of the fuel.

5 So I have, I have a fire that occurred, I
6 have another fire that occurred and was arrested in
7 this same area, and now I have a third evidence of
8 combustion without a fire in close proximity to the
9 surface of the SCR canister, which leaves a witness of
10 a charred product confirming that I have temperatures
11 exceeding the ignition temperature.

12 So I don't have, I don't have a single test
13 on a single tractor, but I have multiple tractors that
14 are exhibiting the same type of characteristic that
15 says this surface is hot enough to support combustion.
16 And what that value is is not important, because I
17 have to be above the ignition temperature. Whether
18 I'm above it by ten, forty, or two hundred doesn't
19 matter. I'm above that threshold.

20 So the issue is we didn't investigate that
21 specific event as an independent fire investigation,
22 but in observing these multiple occasions, we're
23 coming back to because this is occurring in the same
24 area from the same conditions, and we've seen it fully
25 involved, we've seen it arrested, and we've seen it

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1 before it started. You never see that in true fire
2 investigation. You never see that.

3 Q. So how do you know that the debris was singed from
4 heat from the canister?

5 A. The debris was sitting in front of the canister, so --

6 Q. Okay. How do you know that the -- because you can't
7 explain it any other way, right?

8 A. There's no evidence of fire entering into the
9 compartment. There's no cigarette butts around.
10 There's no matches around. It is in close proximity
11 to the canister, such that had it been touched, it
12 could have burned away. So it forms a tattoo in that
13 immediate area, the black halo around the
14 SCR canister.

15 The black halo can't be explained by
16 lightning. It can't be explained by electrical
17 activity. There's no wiring in that area. There's
18 nothing else that would have come in there and formed
19 a black halo around that other than excessive heat
20 from that SCR canister in that immediate area.

21 So coming back to not only does this not
22 exist, but I've seen this now in the three phases.
23 I've seen it at incipient, I've seen it where it's in
24 progress and arrested, and I've seen it where it's
25 consumed a tractor. Not on the same vehicle, but

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1 different vehicles, in the same configuration.

2 Q. Respectfully, I think we're still dealing with the
3 same issue in each of the three. It's the inability
4 to explain the charring through other means, is the
5 only evidence you have that the canister caused the
6 charring.

7 A. The only heat-providing object in that compartment is
8 the SCR canister.

9 Q. And what is the evidence that the canister can provide
10 enough heat to char the debris?

11 A. The charred debris itself.

12 Q. Which we already talked about how the occurrence of a
13 fire is not evidence that the canister is hot enough
14 to cause the fire.

15 A. We didn't have a fire. Where there's charred debris,
16 there's no fire.

17 Q. But isn't the same thing true, that the occurrence of
18 charred debris is not evidence that the debris was
19 charred by the canister?

20 A. That's not entirely true, because the charred debris
21 that we're discovering is not a limited amount of
22 debris. It's not in a particular area. It is
23 immediately surrounding and in close proximity to the
24 SCR canister, and not in only one area. It's around
25 the SCR canister.

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1 So it's like everyone's looking at the sun.
2 Everyone's tan from this way. Everyone's tanning this
3 way because the heat lamp is in front of them. So
4 that pattern in conjunction with the charring is what
5 demonstrates the radiant heat, and any contact that's
6 made is from that SCR canister.

7 Q. But doesn't it also come down to you have eliminated
8 other possible causes of the charred debris, cigarette
9 butt, lightning, electrical wiring, whatever they may
10 be, and the only option left, in your opinion, is that
11 the heat from the canister caused the charring?

12 MR. CORETTI: I'm going to object. It's
13 argumentative. I think it's been asked and answered.

14 MR. ROBINSON: No, I think we're --

15 A. So the charring -- so let's put it this way. So we
16 have debris resting within the confines of this fuel
17 tank compartment in and around the SCR canister, and
18 the surfaces that are in proximity, closest to, and
19 even abutting the SCR canister are charred. Surfaces
20 that are away, remote, or piled beneath these surfaces
21 are not charred.

22 Fire travels from the source and outward.
23 It travels from heat, the ignition source and outward.
24 So if I have charring or debris, it tends to tell me
25 where the fire or heat came from. And the ring, the

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<p style="text-align: right;">Page 165</p> <p>1 black halo, is pointing to the SCR canister.</p> <p>2 So we have charred material. We have to be</p> <p>3 above ignition temperature at some point in time.</p> <p>4 Could have been last week, could have been five</p> <p>5 minutes ago, but at some point in time in operation,</p> <p>6 the collected debris was exposed to temperatures</p> <p>7 sufficient to sponsor combustion.</p> <p>8 BY MR. ROBINSON:</p> <p>9 Q. Okay. Wouldn't a better piece of evidence to</p> <p>10 establish that that can actually cause ignition of</p> <p>11 crop debris, wouldn't a better piece of evidence be</p> <p>12 actually testing data to show how hot the surface of</p> <p>13 the SCR gets during operation?</p> <p>14 A. Yes.</p> <p>15 Q. And if I told you the surface temperature of the</p> <p>16 SCR canister reaches 100 degrees Fahrenheit during</p> <p>17 operation, you would agree with me that the canister</p> <p>18 could not ignite debris?</p> <p>19 A. I would disagree with you that it reaches a hundred</p> <p>20 degrees. I'd ask for your testing results.</p> <p>21 Q. No, I just said if it reached 100 degrees Fahrenheit,</p> <p>22 you would have to agree that that demonstrates the</p> <p>23 canister could not have ignited debris?</p> <p>24 A. The tractor wasn't running if it's a hundred degrees</p> <p>25 Fahrenheit.</p>	<p style="text-align: right;">Page 167</p> <p>1 A. Yes.</p> <p>2 Q. If the testing of the canister during operation</p> <p>3 reaches 200 degrees Celsius, is that sufficient to</p> <p>4 ignite crop debris, corn crop debris?</p> <p>5 A. No.</p> <p>6 Q. So you would -- in order for your theory to be</p> <p>7 correct, that the cause of each of these levels of</p> <p>8 fire to have been the surface temperature of the</p> <p>9 canister, it would need to be above 200 Celsius?</p> <p>10 A. Yes.</p> <p>11 Q. Do you have a threshold at which you believe it is</p> <p>12 possible to ignite crop debris in Celsius?</p> <p>13 A. I don't recall quickly.</p> <p>14 Q. I'm sorry?</p> <p>15 A. I don't recall quickly. I do, but I'm not recalling</p> <p>16 it right now.</p> <p>17 Q. Do you believe that it's possible to ignite crop</p> <p>18 debris if a surface is producing heat at 195 degrees</p> <p>19 Fahrenheit?</p> <p>20 A. No.</p> <p>21 Q. Have you ever heard of a process called pyrolysis?</p> <p>22 A. Yes.</p> <p>23 Q. What is that?</p> <p>24 A. That's the long-term, low-level heating of a</p> <p>25 combustible material to drive off volatiles and</p>
<p style="text-align: right;">Page 166</p> <p>1 Q. I understand.</p> <p>2 A. That's a poor example.</p> <p>3 Q. I'm trying to draw -- I'm trying to talk in -- well,</p> <p>4 let me ask it again.</p> <p>5 If it's 150 degrees Fahrenheit, and I told</p> <p>6 you that was the operating temperature of the skin</p> <p>7 surface of the SCR canister, you would agree that</p> <p>8 could not ignite crop debris?</p> <p>9 A. I would agree.</p> <p>10 Q. And it could not char the crop debris?</p> <p>11 A. I would agree.</p> <p>12 Q. So in order to prove your hypothesis, wouldn't a</p> <p>13 better piece of evidence be the actual operating</p> <p>14 temperature of the canister?</p> <p>15 A. Yes.</p> <p>16 Q. Have you conducted any testing to determine that?</p> <p>17 A. No.</p> <p>18 Q. Have you researched on the internet whether there is</p> <p>19 any such testing out there?</p> <p>20 A. No.</p> <p>21 Q. Have you asked your attorney whether he has possession</p> <p>22 of any such testing?</p> <p>23 A. No.</p> <p>24 Q. Would that be something that you would want to see to</p> <p>25 confirm or disprove your theory?</p>	<p style="text-align: right;">Page 168</p> <p>1 suppress the ignition temperature.</p> <p>2 Q. How much difference does the process of pyrolysis make</p> <p>3 to the ignition temperature of corn? How low can it</p> <p>4 drop it?</p> <p>5 A. I believe 150 C.</p> <p>6 Q. So if the corn material is exposed to heat for long</p> <p>7 enough, it could eventually ignite at 150 C?</p> <p>8 A. That's the claim, yes.</p> <p>9 Q. Are you doing conversions?</p> <p>10 A. Yes.</p> <p>11 Q. I have to do conversions in --</p> <p>12 A. Can I return to the question earlier?</p> <p>13 Q. Sure. What question are we --</p> <p>14 A. The ignition temperature at which I would expect</p> <p>15 cellulosic materials to ignite.</p> <p>16 Q. Oh, okay. What is that?</p> <p>17 A. We offered that it was 200 degrees. I said no. I</p> <p>18 would offer approximately 240 degrees C, with the</p> <p>19 condition I would consider that crop debris is</p> <p>20 vulnerable to ignition.</p> <p>21 Q. So above that it would potentially ignite, below that</p> <p>22 it can't ignite?</p> <p>23 A. So cellulosic material can ignite at about 240 C and</p> <p>24 above. During this period of exposure, depending upon</p> <p>25 the mass and surface area of the material, it may take</p>

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<p style="text-align: right;">Page 169</p> <p>1 longer for the fire to occur or a shorter period of</p> <p>2 time, and increasing the temperature would tend to</p> <p>3 shorten the time before fire would occur.</p> <p>4 The event sponsored by a suppressed</p> <p>5 ignition temperature for pyrolysis to occur is a</p> <p>6 long-term cooking and baking operation that tends,</p> <p>7 again, to drive the volatiles out, and I believe it's</p> <p>8 been claimed that temperatures of the order of 150 C</p> <p>9 are sufficient to cause ignition of pyrolyzed</p> <p>10 material.</p> <p>11 Q. And what is the source of that? You said it's been</p> <p>12 claimed. Who's claimed that?</p> <p>13 A. My general recollection is looking in fire</p> <p>14 investigation reports and studies done by others. I</p> <p>15 don't have a particular citation to offer for that.</p> <p>16 It's anecdotal information in reviewing documents.</p> <p>17 Q. Do you believe that the material that was around this</p> <p>18 SCR canister had undergone pyrolysis?</p> <p>19 A. I don't have an opinion on that.</p> <p>20 Q. Do you have an opinion at which -- let me restart</p> <p>21 that.</p> <p>22 Do you have an opinion of the temperature</p> <p>23 at which this material around this SCR canister could</p> <p>24 have ignited?</p> <p>25 A. I believe this material would ignite of the order of</p>	<p style="text-align: right;">Page 171</p> <p>1 material in your file, but it may have been</p> <p>2 Dr. Smith's.</p> <p>3 A. So Dr. Smith would have researched this and he would</p> <p>4 have acquired this particular document.</p> <p>5 Q. And in the report it states that: The Manufacturers</p> <p>6 of Emission Controls Association cites the thermal</p> <p>7 operating range of SCR catalysts to be approximately</p> <p>8 250 to 450 degrees Celsius.</p> <p>9 Do you see that in the report? I'm sorry,</p> <p>10 if you need to take your time and flip through, that's</p> <p>11 fine.</p> <p>12 A. Let me find it ...</p> <p>13 Q. No-no, this is in your report, not in the MECA report.</p> <p>14 A. You're on page?</p> <p>15 Q. 1, I believe. Actually, the first paragraph on</p> <p>16 page 2, I'm sorry, at the very top.</p> <p>17 A. Yeah.</p> <p>18 Q. Okay. The statement is: MECA cites the thermal</p> <p>19 operating range of temperature of SCR catalysts to be</p> <p>20 approximately 250 to 450 degrees Celsius.</p> <p>21 Do you see that?</p> <p>22 A. Yes.</p> <p>23 Q. Do you know if that is in reference to the internal</p> <p>24 gas temperature inside the catalyst?</p> <p>25 A. Yes, it is.</p>
<p style="text-align: right;">Page 170</p> <p>1 240 degrees C.</p> <p>2 Q. Okay. So if it was, the temperature to which it was</p> <p>3 exposed was below 240, you would not have expected it</p> <p>4 to ignite?</p> <p>5 A. I would not.</p> <p>6 Q. So in this scenario, given that there were fires, and</p> <p>7 given that you believe the heat from the exhaust or</p> <p>8 the SCR canister caused the fires, is it your opinion</p> <p>9 that the canister's surface temperature exceeded</p> <p>10 240 C?</p> <p>11 A. Yes.</p> <p>12 Q. If in fact the operating temperature of the canister</p> <p>13 is lower than 240 C, would that disprove your theory?</p> <p>14 A. Yes.</p> <p>15 Q. And if the operating temperature of the SCR canister</p> <p>16 is lower than 240 C, then you would not be presenting</p> <p>17 any design defect theories that could have caused this</p> <p>18 fire?</p> <p>19 A. Correct.</p> <p>20 Q. What is the Manufacturers of Emission Controls</p> <p>21 Association? You have a publication from them. I</p> <p>22 just didn't know what that group was. What is that</p> <p>23 group?</p> <p>24 A. I don't know.</p> <p>25 Q. Okay. Let me hand you the -- it's Exhibit 24. It was</p>	<p style="text-align: right;">Page 172</p> <p>1 Q. So it's not necessarily the surface temperature on the</p> <p>2 outside?</p> <p>3 A. Correct.</p> <p>4 Q. And then the next sentence says: As crop debris is a</p> <p>5 cellulosic material, similar to paper or drop peat,</p> <p>6 autoignition may be achieved at temperatures as low as</p> <p>7 150 to 229 Celsius?</p> <p>8 A. Yes.</p> <p>9 Q. But you would agree that comparing those two</p> <p>10 temperatures is like apples and oranges, right,</p> <p>11 because the debris would not have been exposed to 250</p> <p>12 to 450 C?</p> <p>13 A. Correct.</p> <p>14 Q. There's insulative layers that would have separated</p> <p>15 the debris from that gas in the center of the</p> <p>16 catalyst?</p> <p>17 A. Correct.</p> <p>18 Q. Do you know where CNH's design falls within that range</p> <p>19 of gas temperatures on the inside of its SCR</p> <p>20 catalysts?</p> <p>21 A. No.</p> <p>22 Q. If the gas range goes from 250 to 450, do you know</p> <p>23 what percentage of reduction occurs to that</p> <p>24 temperature by the time you get to the outside skin</p> <p>25 temperature of the SCR catalyst?</p>

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<p style="text-align: right;">Page 173</p> <p>1 A. No.</p> <p>2 Q. Would you expect it to be a 50 percent reduction?</p> <p>3 A. I would have to review the design assembly.</p> <p>4 Q. You don't have an opinion, one way or the other?</p> <p>5 A. I don't have an opinion.</p> <p>6 Q. Do you know if the skin temperature on the outside of</p> <p>7 an SCR canister is uniform?</p> <p>8 A. No, I do not know.</p> <p>9 Q. Do you know how the temperature of the inlet pipe</p> <p>10 compares to the canister itself?</p> <p>11 A. No.</p> <p>12 Q. Do you know the design of the inlet pipe?</p> <p>13 A. No.</p> <p>14 Q. Do you know if it is a double-walled design?</p> <p>15 A. No.</p> <p>16 Q. And in areas like the inlet pipe, you would agree that</p> <p>17 even the skin temperature of the inlet pipe would</p> <p>18 never be exposed to the debris, because there's that</p> <p>19 boot around the inlet pipe, correct?</p> <p>20 A. I would agree only as the boot protects the inlet</p> <p>21 pipe, but if there are gaps or misalignments, the pipe</p> <p>22 then is exposed to atmospheric collection of debris or</p> <p>23 other material.</p> <p>24 Q. Sure. So if it's covered with the boot, then the</p> <p>25 debris would never be exposed to the surface</p>	<p style="text-align: right;">Page 175</p> <p>1 Q. Do you believe that a manufacturer that designs its</p> <p>2 exhaust system in a way that prevents the outside skin</p> <p>3 temperature of the entire system from exceeding 210 C,</p> <p>4 that that would be an appropriate design as far as</p> <p>5 heat transfer?</p> <p>6 A. There are more decisions in designing the exhaust</p> <p>7 system than simply outside temperature. So that's a</p> <p>8 poor question.</p> <p>9 Q. Let me rephrase. That was a poor question.</p> <p>10 A. Let me try to answer the question you didn't ask.</p> <p>11 Q. Okay.</p> <p>12 A. It would be prudent for the designer of the equipment</p> <p>13 to maintain the internal temperatures through the</p> <p>14 exhaust system for their processing or reduction and</p> <p>15 to offer guards or surrounding insulation to prevent</p> <p>16 elevated temperatures at the exposed surface from</p> <p>17 exceeding ignition temperatures.</p> <p>18 Q. And if they create the design that eliminates the</p> <p>19 potential for exposure in excess of the ignition</p> <p>20 temperatures, then you would have no criticism of the</p> <p>21 design with respect to hot-surface ignition?</p> <p>22 A. Correct.</p> <p>23 Q. So if there's no spot on the outside of the SCR, of</p> <p>24 the T8.390 that exceeds 240 C, then you would have no</p> <p>25 criticism of that design with respect to heat</p>
<p style="text-align: right;">Page 174</p> <p>1 temperature of the pipe?</p> <p>2 A. Correct.</p> <p>3 Q. And wherever it's not covered, the surface temperature</p> <p>4 of the pipe would be exposed to the debris, correct?</p> <p>5 A. Correct.</p> <p>6 Q. And you would need at least 240 C in that location to</p> <p>7 ignite crop debris?</p> <p>8 A. That's my opinion.</p> <p>9 Q. Corn crop debris, is that correct?</p> <p>10 A. Cellulosic material is corn crop debris, yes.</p> <p>11 Q. Do all cellulosic materials have the similar or same</p> <p>12 ignition point?</p> <p>13 A. Similar.</p> <p>14 Q. Okay. And where would, you know, corn fall in that</p> <p>15 range?</p> <p>16 A. Like wood fiber, sawdust, 450, 451.</p> <p>17 Q. Farenheit?</p> <p>18 A. Farenheit. 250 C, roughly, 232 C.</p> <p>19 Q. The reason the need for the boot, right?</p> <p>20 A. Correct.</p> <p>21 Q. So 451 is what Celsius?</p> <p>22 A. 232.</p> <p>23 Q. 232. And then you've said just roughly 240 would be</p> <p>24 your --</p> <p>25 A. Roughly 240.</p>	<p style="text-align: right;">Page 176</p> <p>1 transfer?</p> <p>2 A. The point at which the SCR canister does not exceed</p> <p>3 240 C would be a service that would be in proximity to</p> <p>4 where we believe the fire occurred.</p> <p>5 Q. I'm sorry?</p> <p>6 A. So let me offer an example. As the test may be</p> <p>7 conducted to identify temperature point on the</p> <p>8 SCR canister, we can have crop debris that is in</p> <p>9 proximity, in contact or surrounding area, such that</p> <p>10 the planned/designed/natural convection for the</p> <p>11 SCR canister to relieve heat is impeded by the debris,</p> <p>12 such that in a purest test, where the SCR is naked and</p> <p>13 I can verify no temperature exceeds 240 C, but in the</p> <p>14 event that I apply crop debris in the area, that that</p> <p>15 impedes the airflow and I have temperatures reaching</p> <p>16 300 C in that area, that's a different test, and that</p> <p>17 would not be picked up by the first virgin test.</p> <p>18 So, yes, in fact, if in all conditions we</p> <p>19 can verify through testing or documentation that even</p> <p>20 with an overburden of crop debris no surface ever</p> <p>21 exceeds 240, I would agree. But without the benefit</p> <p>22 of an impairment or a contaminant present, I can't</p> <p>23 agree with that premise.</p> <p>24 Q. Now, in this particular model there is no</p> <p>25 convection -- there's no airflow from the bottom up,</p>

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<p style="text-align: right;">Page 177</p> <p>1 is that right?</p> <p>2 A. No.</p> <p>3 Q. So --</p> <p>4 A. There is airflow.</p> <p>5 Q. But there's no airflow from the ground up through the</p> <p>6 bottom?</p> <p>7 A. The platform terminates before the front cover. So</p> <p>8 there is an open mail slot at the base of the front</p> <p>9 cover and the floor of the fuel compartment that</p> <p>10 allows air to enter and convectively travel through</p> <p>11 that compartment and up beyond the opening of the top</p> <p>12 of the cover.</p> <p>13 Q. If there --</p> <p>14 A. Now, that convective current only sees the front of</p> <p>15 the SCR, it doesn't travel behind it, because there's</p> <p>16 a solid floor beneath it.</p> <p>17 Q. Okay. So the back of the SCR that we're talking about</p> <p>18 where you believe the origin of the fire was --</p> <p>19 A. Yes.</p> <p>20 Q. -- there's no airflow from that mail slot?</p> <p>21 A. Correct.</p> <p>22 Q. And there's no airflow from any other direction, is</p> <p>23 that correct?</p> <p>24 A. Correct.</p> <p>25 Q. Okay. So whether there's debris there or not is not</p>	<p style="text-align: right;">Page 179</p> <p>1 above 200, and I'm under load, I'm operating maybe 750</p> <p>2 inside the catalyst itself, and I've been doing this</p> <p>3 for an hour-and-a-half, I'd probably be above 300 at</p> <p>4 the surface, 300 C at the surface.</p> <p>5 So the issue is, inside the catalyst we</p> <p>6 have to be above 300 C for it to light off. So</p> <p>7 they're saying the general operating range is of the</p> <p>8 order of 450 to 250, thereabouts. So 300 is a</p> <p>9 light-off temperature. That's when it starts to work.</p> <p>10 It gets more efficient as it warms up.</p> <p>11 So now we're back to the point, we're</p> <p>12 operating at under load. We have a large charge. I'm</p> <p>13 trying to treat a lot of material. I have a big</p> <p>14 exothermic reaction. So maybe I'm up around 750. The</p> <p>15 surface temperature of the SCR is not the same at idle</p> <p>16 as it is during operation.</p> <p>17 Q. Sure. So my --</p> <p>18 A. So the test, again, if I could say no surface on this</p> <p>19 ever gets above 240, or whatever, what's the basis of</p> <p>20 that test.</p> <p>21 Q. Okay. But my question is, you threw out 300 as you</p> <p>22 could get to 300. My question is, how much difference</p> <p>23 does shutting down convection completely make to the</p> <p>24 surface temperature of the SCR canister? Are you</p> <p>25 going to double the temperature of the skin by</p>
<p style="text-align: right;">Page 178</p> <p>1 going to change the convection of that side of the</p> <p>2 canister?</p> <p>3 A. The issue is convection is a global event, like a</p> <p>4 fluid. So wherever the air can touch, flow, or move</p> <p>5 around this particular area, convection is available.</p> <p>6 It may not be as efficient or thorough behind the SCR</p> <p>7 as it is in the front, but air surrounds the whole</p> <p>8 thing.</p> <p>9 So now, like the insulation blankets, if I</p> <p>10 pile crop debris in there, I can't have convection</p> <p>11 at -- it's impeded. So it's like breathing through</p> <p>12 five pillows. You're still breathing, but you can't</p> <p>13 breathe as effectively. So you can't shed CO. You</p> <p>14 can't shed heat. So that particular area may be</p> <p>15 vulnerable or exceed the 240, where all the other</p> <p>16 areas that are exposed and unprotected never exceed</p> <p>17 240.</p> <p>18 So that test -- how that test is conducted</p> <p>19 and that reported value is important, because if you</p> <p>20 say no surface on this ever exceeds 240, was that an</p> <p>21 unimpeded test or did that have a blockage that would</p> <p>22 augment that.</p> <p>23 Q. How much difference would an impediment make to the</p> <p>24 test value, in your opinion?</p> <p>25 A. Sufficient to cause ignition. So if no surface got</p>	<p style="text-align: right;">Page 180</p> <p>1 shutting off all convective flow?</p> <p>2 A. No.</p> <p>3 Q. Are you going to increase it by 20 percent?</p> <p>4 A. Conceivably.</p> <p>5 Q. And do you have something to support that, where you</p> <p>6 say, "We've studied this and here's how we know it's</p> <p>7 20 percent"?</p> <p>8 A. No.</p> <p>9 Q. Is that just generally your belief?</p> <p>10 A. Yes.</p> <p>11 Q. So in this case, if we assume the entire convection</p> <p>12 was shut down because of debris that accumulated, how</p> <p>13 much difference would that have made in the</p> <p>14 temperature of this canister, the skin temperature of</p> <p>15 this canister?</p> <p>16 A. It would have reached a temperature at which the</p> <p>17 surface contact would have caused ignition of</p> <p>18 cellulosic material.</p> <p>19 Q. How do you know that?</p> <p>20 A. Had there not been -- pardon me.</p> <p>21 Again, in the case of the tractor that we</p> <p>22 examined with the black halo around it, there was</p> <p>23 sufficient convection surrounding that area. This was</p> <p>24 off the floor of the compartment, where it's sited.</p> <p>25 So now if I pack that full, insulate the whole thing,</p>

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<p style="text-align: right;">Page 181</p> <p>1 it's no longer losing heat through convection. You've</p> <p>2 blocked that whole convection.</p> <p>3 So the only way it can eradicate heat,</p> <p>4 then, is conduction. So instead of having air go over</p> <p>5 this like Mag coolant, I've suddenly stopped all of</p> <p>6 that air cooling and it relies upon relieving all of</p> <p>7 that heat, whatever the heat flux happens to be. So</p> <p>8 that heat flux then has to travel through the</p> <p>9 material, which insulation restricts the flow of heat</p> <p>10 and you'd elevate the temperature.</p> <p>11 What that value is, I don't have a number</p> <p>12 for you. That would depend on upon the fuel, fuel</p> <p>13 load, temperature of the exhaust, how much urea you're</p> <p>14 dumping into there, what that reaction would be. That</p> <p>15 is an identifiable value, but I have not tested that</p> <p>16 value.</p> <p>17 Q. How much of the surface area of the exterior of the</p> <p>18 canister was covered with crop debris?</p> <p>19 A. I don't know.</p> <p>20 Q. Was the crop debris piled ten percent of the way up</p> <p>21 the canister?</p> <p>22 A. I don't know.</p> <p>23 Q. Fifty percent?</p> <p>24 A. I don't know.</p> <p>25 Q. You don't have any idea?</p>	<p style="text-align: right;">Page 183</p> <p>1 that 240 degrees in those situations is the occurrence</p> <p>2 of charred debris in one case and a fire in another,</p> <p>3 is that right?</p> <p>4 A. Yes.</p> <p>5 Q. And the inability to explain those fires any other</p> <p>6 way?</p> <p>7 A. And not having investigated those fires, as well. So</p> <p>8 it's a long-distance evaluation, it's not a proper 921</p> <p>9 investigation, but it's more than coincidence when</p> <p>10 these things are happening and you're viewing the</p> <p>11 progress of how this would go from charring, to a</p> <p>12 small fire, to a large fire, in the same envelope, in</p> <p>13 the same organization of components.</p> <p>14 Q. But you would agree that it is relying on negative</p> <p>15 corpus to reach that conclusion?</p> <p>16 A. Yes.</p> <p>17 Q. Do you believe that the temperature of those areas</p> <p>18 that had debris packed around them, the skin</p> <p>19 temperature of the SCR in those areas would have been</p> <p>20 increased by twenty percent over what they would have</p> <p>21 been with no debris?</p> <p>22 A. I don't know.</p> <p>23 Q. You don't have an opinion as to what the actual</p> <p>24 increase in temperature would have been?</p> <p>25 A. No.</p>
<p style="text-align: right;">Page 182</p> <p>1 A. I don't know.</p> <p>2 Q. Doesn't the level at which it's piled up affect how</p> <p>3 much convection was actually occurring?</p> <p>4 A. Yes.</p> <p>5 Q. And in order for you to determine what effect the</p> <p>6 convection in this case from the debris would have had</p> <p>7 on the surface temperature of the canister, you would</p> <p>8 need to know how much debris there was, is that</p> <p>9 correct?</p> <p>10 A. Not entirely, because that loss of convection affects</p> <p>11 the SCR in that immediate area of contact. So, for</p> <p>12 example, if I have ten percent fill, ten percent of</p> <p>13 the surface area of the SCR is affected. If I have</p> <p>14 fifty percent fill, fifty percent is affected, but the</p> <p>15 terminal temperature is still the same.</p> <p>16 Q. Okay. So for the ten percent that's affected, let's</p> <p>17 just assume it's ten percent, if ten percent is</p> <p>18 covered by debris, you believe that that surface would</p> <p>19 have exceeded 240 C in that scenario?</p> <p>20 A. Yes.</p> <p>21 Q. And the basis for that is that you have these other</p> <p>22 examples where there's been charred debris or the fire</p> <p>23 in the Hoffland Dairy fire, correct?</p> <p>24 A. Yes.</p> <p>25 Q. But the basis for knowing that the temperature exceeds</p>	<p style="text-align: right;">Page 184</p> <p>1 Q. So given that you don't know what the operating</p> <p>2 temperature of the canister would be without debris,</p> <p>3 you can't opine that the temperature would have</p> <p>4 exceeded 240 C with debris?</p> <p>5 MR. CORETTI: I'm going to object. It's</p> <p>6 been asked and answered.</p> <p>7 MR. ROBINSON: No, I think it's a different</p> <p>8 question.</p> <p>9 A. Can you repeat the question?</p> <p>10 BY MR. ROBINSON:</p> <p>11 Q. Sure. Let me rephrase it to make it more</p> <p>12 straightforward.</p> <p>13 You don't know what the operating</p> <p>14 temperature of the canister is with no debris present,</p> <p>15 is that right?</p> <p>16 A. Correct.</p> <p>17 Q. And you don't know what percentage it would increase</p> <p>18 the temperature to have debris packed around it in</p> <p>19 that location, correct?</p> <p>20 A. Correct.</p> <p>21 Q. So therefore, you can't testify that the temperature</p> <p>22 on the areas that were compacted by debris did in fact</p> <p>23 exceed 240 C?</p> <p>24 A. The areas that were compacted had to exceed 240 C</p> <p>25 because we had combustion or charring.</p>

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<p style="text-align: right;">Page 185</p> <p>1 Q. And --</p> <p>2 A. So the after-the-fact evidence, not during the event,</p> <p>3 but after the event said this disfigurement is due to</p> <p>4 exceeding this temperature, so the -- and in</p> <p>5 proximity, it's nose to tail in proximity. Where are</p> <p>6 we pointing? Everyone's pointing back at the only</p> <p>7 source of exothermic reaction, so --</p> <p>8 Q. But to know if that exothermic reaction creates enough</p> <p>9 heat to ignite the debris, you have to know what that</p> <p>10 temperature would be, right?</p> <p>11 A. Not entirely, because -- further, 921 is a guide. 921</p> <p>12 is not a standard. All fires are not identical. So</p> <p>13 in those cases, if features/artifacts/items are not</p> <p>14 available, the guide is used to help you direct the</p> <p>15 investigation.</p> <p>16 So in this particular case, we're not</p> <p>17 investigating a single fire that we're trying to</p> <p>18 figure out what happened. We have a family, a family</p> <p>19 in the case where we have a similar tractor that had a</p> <p>20 fire and another one that's been defaced, all in the</p> <p>21 same area. So 921 for multiple occurrences typically</p> <p>22 is arson, but we don't have evidence of arson because</p> <p>23 it's different owners, different physical separation.</p> <p>24 So we're back to why is this happening in</p> <p>25 the same area, the same confine, and I see a</p>	<p style="text-align: right;">Page 187</p> <p>1 operating normally and examining to find this event.</p> <p>2 So, once again, I have a great textbook</p> <p>3 example. I have a progression of a fire from</p> <p>4 charring, to small fire, to large fire. That's</p> <p>5 typically what you do when you burn, burn cells; we're</p> <p>6 going to have a fire, let's see how this progresses so</p> <p>7 we can see how it goes. But this is three different</p> <p>8 tractors with a progression of the fire in a similar</p> <p>9 fashion, and what's common to this? They all have</p> <p>10 SCRs.</p> <p>11 So if they didn't have an SCR, or it's</p> <p>12 removed somewhere else and we had a fire in that area,</p> <p>13 that would be a different condition. But they all</p> <p>14 have SCRs. That's common. We have a heat-producing</p> <p>15 device, an exothermic device in proximity to collected</p> <p>16 organic material in an area of entrapment, where a</p> <p>17 design -- you could have no floor in there; anything</p> <p>18 that gets collected falls to the ground. Then there's</p> <p>19 no way you can ever collect enough material or pack it</p> <p>20 in there with an air hose to cause a fire. There's no</p> <p>21 fuel.</p> <p>22 So the defect I find here is there's an</p> <p>23 entrapment area that's allowed to collect fuel.</p> <p>24 Whether that fuel is sufficiently in contact, or</p> <p>25 sufficiently dense, or has enough oxygen, that's a</p>
<p style="text-align: right;">Page 186</p> <p>1 progression in the items I'm looking at. So</p> <p>2 individually, this tractor, we had a fire; no, I can't</p> <p>3 tell. This tractor, we had a fire, I can't tell. But</p> <p>4 the family, momma bear/papa bear/baby bear here, they</p> <p>5 tell me this is what's going on.</p> <p>6 So, once again, that temperature value</p> <p>7 is -- I don't need to know 232, 237, 498, that's not</p> <p>8 important, but I'm above the ignition temperature of</p> <p>9 the fuel that's available. And if there's sufficient</p> <p>10 fuel remaining, it will ignite. You can have fuel</p> <p>11 there that will burn and never enter into a fire, and</p> <p>12 that's remaining evidence around there. That's the</p> <p>13 black halo.</p> <p>14 Q. And the reason you know that you're at a temperature</p> <p>15 that's high enough to ignite is because --</p> <p>16 A. It's charred.</p> <p>17 Q. It's charred?</p> <p>18 A. Or it burned, it burned.</p> <p>19 Q. Or it burned, and you can't explain it any other way?</p> <p>20 A. No other way has been identified in that area that's</p> <p>21 causative. There's no electrical components in that</p> <p>22 immediate area. There's no evidence of malicious</p> <p>23 intent. No one has hammer marks. There's no torch</p> <p>24 there. There's no cigarette butts there. And these</p> <p>25 were during the tractor either being operated or</p>	<p style="text-align: right;">Page 188</p> <p>1 variable that we can't control. But put holes in the</p> <p>2 floor so it just -- dirt falls out. That's an easy</p> <p>3 design, other than removing it from being surrounded</p> <p>4 by a fuel tank, which is a hazard waiting to happen,</p> <p>5 having a blanket around there.</p> <p>6 So, once again, I have three independent</p> <p>7 events, operated in different fashions, all of which</p> <p>8 demonstrate this same burning/singeing surrounding an</p> <p>9 exothermic device. What device in there is producing</p> <p>10 heat? That is the SCR.</p> <p>11 Q. And if I told you that the temperature of the SCR</p> <p>12 never exceeds 240 C, then you would be -- your opinion</p> <p>13 would be incorrect?</p> <p>14 A. Correct. And, once again, that test would have to</p> <p>15 verify that with impairment, that claim is still true.</p> <p>16 Q. And if there was impairment, you would expect it to be</p> <p>17 at an increased percentage, but you don't know what</p> <p>18 percentage it would increase the temperature?</p> <p>19 A. Correct.</p> <p>20 Q. It would not increase it fifty percent?</p> <p>21 A. I doubt it.</p> <p>22 Q. And would it increase it less than twenty percent?</p> <p>23 A. I don't know.</p> <p>24 Q. Do you know if it's more than twenty percent?</p> <p>25 A. I don't know.</p>

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<p style="text-align: right;">Page 189</p> <p>1 Q. Somewhere between a zero and fifty percent increase?</p> <p>2 A. I don't know.</p> <p>3 Q. Do you know if debris compacted around the inlet pipe?</p> <p>4 A. I do not know.</p> <p>5 Q. Do you know if debris compacted around the inlet pipe</p> <p>6 such that it would have impeded the convection off the</p> <p>7 inlet pipe?</p> <p>8 A. Can you repeat the question?</p> <p>9 Q. Sure. Do you know if debris compacted around the</p> <p>10 inlet pipe such that it would have affected the</p> <p>11 convection around the inlet pipe?</p> <p>12 A. I do not know, but my general observation of the</p> <p>13 configuration, it appears that would not be the case,</p> <p>14 because the convection exit is immediately surrounding</p> <p>15 the inlet pipe in that particular opening. So from a</p> <p>16 convective point of view, air should always be flowing</p> <p>17 outward.</p> <p>18 Further, the inlet pipe which is in</p> <p>19 proximity has a corrugated gate around it with a</p> <p>20 couple clamps and sits proud above the surface, has an</p> <p>21 always draw around it. So I have exiting air through</p> <p>22 the opening and drawing air through the inlets. So I</p> <p>23 have a sweeping action going on around there. I would</p> <p>24 find it difficult to compact enough to impair the</p> <p>25 convection.</p>	<p style="text-align: right;">Page 191</p> <p>1 the --</p> <p>2 A. That's on the air filter, that's air inlet.</p> <p>3 Q. Okay.</p> <p>4 A. You're talking about an exhaust pipe.</p> <p>5 Q. I'm talking about an exhaust inlet pipe, the pipe that</p> <p>6 we've been referring to the whole time that has the</p> <p>7 boot around it.</p> <p>8 A. For commentary I was offering you about the booted</p> <p>9 gator is on the air intake. You said air inlet.</p> <p>10 That's what keyed me to "inlet."</p> <p>11 Q. Okay, let's make sure that we back up for a second.</p> <p>12 So earlier I had questions about the boot</p> <p>13 that insulates the intake pipe, the inlet pipe.</p> <p>14 A. Yes.</p> <p>15 Q. And I'm referring to the pipe that comes off of the</p> <p>16 exhaust system down into the bottom of the</p> <p>17 SCR canister.</p> <p>18 A. Very good.</p> <p>19 Q. Is that what you're referring to?</p> <p>20 A. No.</p> <p>21 Q. Okay, let's back up, then.</p> <p>22 A. We were, we were talking about convective issues, and</p> <p>23 I offered there's a mail slot opening at the base of</p> <p>24 the front panel, and we talked about exiting the top.</p> <p>25 As you were talking about the air inlet pipe where it</p>
<p style="text-align: right;">Page 190</p> <p>1 Q. So specific to the inlet pipe, you would not have</p> <p>2 expected the inlet pipe surface temperature to be</p> <p>3 hotter because of the presence of debris?</p> <p>4 A. Only when it's on fire.</p> <p>5 Q. Other than being on fire, just during the operation,</p> <p>6 debris would not have affected the convection such</p> <p>7 that the temperature would have increased?</p> <p>8 A. No.</p> <p>9 Q. And so if the testing shows that the inlet pipe never</p> <p>10 exceeds 240 C, then you would agree that would</p> <p>11 disprove your theory?</p> <p>12 MR. CORETTI: I'm going to object, same --</p> <p>13 hold on. Objection. It's been asked and answered,</p> <p>14 this is the third time now.</p> <p>15 MR. ROBINSON: No, we're talking about the</p> <p>16 inlet pipe now, which we haven't talked about. We've</p> <p>17 talked about the canister.</p> <p>18 BY MR. ROBINSON:</p> <p>19 Q. So let me ask the question again --</p> <p>20 A. Let me -- I'm confused.</p> <p>21 Q. Okay.</p> <p>22 A. When you're talking about inlet pipe, I was</p> <p>23 understanding air inlet to the air filter, which is</p> <p>24 sitting proud of that surface.</p> <p>25 Q. I thought you just referred to the gator clamp and</p>	<p style="text-align: right;">Page 192</p> <p>1 exits is next to the air filter, the air intake,</p> <p>2 that's where we were confusing.</p> <p>3 Q. Okay.</p> <p>4 A. That's what I was talking about the booted gator.</p> <p>5 Q. So earlier in the deposition, like an hour ago, we</p> <p>6 were talking about a boot that wraps around the inlet?</p> <p>7 A. We were talking about a fabric, fiber blanket that</p> <p>8 wrapped around it versus a corrugated rubber gator on</p> <p>9 the air intake.</p> <p>10 Q. Okay. So when we were referring earlier to the boot</p> <p>11 around the inlet, are we talking about the pipe that</p> <p>12 goes into the SCR canister? Is that what you were</p> <p>13 referring to?</p> <p>14 A. Could we back up? I would like to find out where I</p> <p>15 began to mention that, and I can clarify where that</p> <p>16 was misstated.</p> <p>17 MR. ROBINSON: We can go off the record for</p> <p>18 just a second.</p> <p>19 (Off the record at 2:51 p.m.)</p> <p>20 (Back on the record at 2:51 p.m.)</p> <p>21 BY MR. ROBINSON:</p> <p>22 Q. So we talked off the record for a minute. I think</p> <p>23 we've clarified our misunderstanding.</p> <p>24 So you were talking about how debris</p> <p>25 compacted around the canister can cause convection to</p>

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<p style="text-align: right;">Page 193</p> <p>1 be reduced, which results in a higher surface</p> <p>2 temperature on the canister, correct?</p> <p>3 A. Yes.</p> <p>4 Q. Would you expect debris to -- let me restart that.</p> <p>5 Do you know if debris accumulated around</p> <p>6 the inlet pipe into the SCR canister before this fire?</p> <p>7 A. I don't know.</p> <p>8 Q. Would you expect debris to accumulate in that vicinity</p> <p>9 such that it could cause a change or difference in</p> <p>10 convection and a rise in the surface temperature of</p> <p>11 the inlet pipe?</p> <p>12 A. Yes.</p> <p>13 Q. Is it possible, just the way the system is designed,</p> <p>14 for debris to accumulate that high?</p> <p>15 A. Yes.</p> <p>16 Q. Do you know how high the inlet pipe is off of the</p> <p>17 surface below it?</p> <p>18 A. Inches.</p> <p>19 Q. Is there any, is there any wall or solid surface</p> <p>20 around that that can compact horizontally against the</p> <p>21 inlet pipe?</p> <p>22 A. The side wall of the fuel tank and the blanket.</p> <p>23 Q. So the side wall of the fuel tank extends that far</p> <p>24 into the interior of the tractor?</p> <p>25 A. It approaches and abuts the rear-facing surface of the</p>	<p style="text-align: right;">Page 195</p> <p>1 A. What I've drawn an arrow to is the inboard side of the</p> <p>2 right-side fuel tank, which shows a circular,</p> <p>3 quarter-circle accommodation cutout that corresponds</p> <p>4 to the general location of the inlet pipe attachment</p> <p>5 to the SCR. And I can draw an arrow generally on the</p> <p>6 SCR where this would point to.</p> <p>7 Q. Sure.</p> <p>8 A. And this will be a hidden arrow because the</p> <p>9 perspectives are different.</p> <p>10 Q. And so your testimony is, it's possible that debris</p> <p>11 accumulated in that area, such that the convection was</p> <p>12 affected off of the inlet pipe?</p> <p>13 A. Yes.</p> <p>14 Q. But you don't know if that happened or not?</p> <p>15 A. Correct.</p> <p>16 Q. You would be hypothesizing or speculating as to the</p> <p>17 presence of the debris in that location?</p> <p>18 A. Yes.</p> <p>19 Q. And you would be speculating that the surface</p> <p>20 temperature of the inlet pipe would have been</p> <p>21 increased due to the presence of hypothetical debris?</p> <p>22 A. If hypothetical debris is in contact with a hot</p> <p>23 surface, the temperature would increase. That's not</p> <p>24 speculation. That is an engineering principle.</p> <p>25 Q. No, the speculation is whether the debris was there or</p>
<p style="text-align: right;">Page 194</p> <p>1 boot, which is shown in the diagram of the exploded</p> <p>2 parts diagram.</p> <p>3 Q. On Exhibit 28 you believe it is demonstrated in this</p> <p>4 picture?</p> <p>5 A. Yes.</p> <p>6 Q. In what way or which page?</p> <p>7 A. In the assemblage of the three-page document, the</p> <p>8 first being a right-side view of the tractor, the</p> <p>9 second page showing an exploded view of the exhaust</p> <p>10 system, and the --</p> <p>11 Q. Is it shown in that picture, how the -- the proximity</p> <p>12 of the fuel tank to the inlet pipe, is it demonstrated</p> <p>13 in that picture?</p> <p>14 A. No.</p> <p>15 Q. Okay.</p> <p>16 A. In the third illustration, which is an exploded view</p> <p>17 of the fuel tanks, we see in the right-side fuel tank</p> <p>18 to the upper left of the image, which envelopes the</p> <p>19 majority of the SCR, has a round cutout area to</p> <p>20 accommodate the inlet pipe of the SCR. And would you</p> <p>21 like me to arrow this?</p> <p>22 Q. Sure, draw a circle or an arrow, however you want to</p> <p>23 denote that.</p> <p>24 And you've drawn an arrow to -- what have</p> <p>25 you drawn an arrow to?</p>	<p style="text-align: right;">Page 196</p> <p>1 not. So whether this process took place is merely a</p> <p>2 speculative guess.</p> <p>3 A. Whether debris was present or not at this location is</p> <p>4 speculation, correct.</p> <p>5 Q. And so, therefore, whether the process of convection</p> <p>6 being reduced is a hypothesis, but it's based on a</p> <p>7 speculative assumption or guess?</p> <p>8 A. The reduction convection is not a hypothesis. If it</p> <p>9 is a fact, it's an engineering principle. However,</p> <p>10 the presence of debris which would impair that</p> <p>11 convection is a speculation. Speculating debris and</p> <p>12 speculating a function are not the same. The function</p> <p>13 is an engineering principle.</p> <p>14 Q. I understand. You cannot say that that process</p> <p>15 actually took place on this tractor before the fire?</p> <p>16 A. Correct.</p> <p>17 Q. Do you have any evidence that the surface of the inlet</p> <p>18 pipe itself provided the heat to ignite debris and</p> <p>19 cause this fire?</p> <p>20 A. No.</p> <p>21 Q. And earlier you drew this on Exhibit 36, a circle, and</p> <p>22 that encapsulates both the inlet pipe and the side of</p> <p>23 the canister, correct?</p> <p>24 A. The discussion we had at the time is I was identifying</p> <p>25 the quadrant of the SCR in which I believe the origin</p>

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<p style="text-align: right;">Page 197</p> <p>1 occurred. That quadrant may incorporate a portion of</p> <p>2 the inlet pipe to the SCR.</p> <p>3 Q. But you don't have an opinion as to whether it was the</p> <p>4 SCR canister or the inlet pipe?</p> <p>5 A. Correct.</p> <p>6 Q. Do you know what a thermocouple is?</p> <p>7 A. Yes.</p> <p>8 Q. Is that a valid way to test temperatures of various</p> <p>9 surfaces?</p> <p>10 A. Yes.</p> <p>11 Q. If you were going to test the temperature of this</p> <p>12 canister during operation, how would you do it?</p> <p>13 A. I would instrument it with a variety of thermocouples</p> <p>14 at various locations, as well as use the benefit of</p> <p>15 thermal imaging, to look for temperature profiles.</p> <p>16 Q. So a scan?</p> <p>17 A. So a thermocouple only tests temperature at a spot. A</p> <p>18 thermal image gives you a global, typically colored</p> <p>19 image of what's going on, and you can use them to</p> <p>20 corroborate each other, where the thermocouple is</p> <p>21 accurate to a particular point and the thermal image</p> <p>22 can tell you whether this region is of a similar</p> <p>23 temperature or not.</p> <p>24 Q. Did you consider doing that type of testing in this</p> <p>25 case?</p>	<p style="text-align: right;">Page 199</p> <p>1 Q. So if you have a spark but no fuel, there's no fire?</p> <p>2 A. Correct.</p> <p>3 Q. And if you have fuel but no spark, there's no fire?</p> <p>4 A. Or no oxygen, correct.</p> <p>5 Q. Or no oxygen.</p> <p>6 Is it your understanding that every T8.390</p> <p>7 tractor of that same year has the same design?</p> <p>8 A. Yes.</p> <p>9 Q. Do you know how many tractors there are out there like</p> <p>10 that?</p> <p>11 A. More than two.</p> <p>12 Q. Do you know if it's thousands?</p> <p>13 A. I have no idea.</p> <p>14 Q. Do you know how many fires there have been on that</p> <p>15 model year tractor?</p> <p>16 A. I do not.</p> <p>17 Q. If there's a design defect that allows for the</p> <p>18 accumulation of debris next to a surface that can</p> <p>19 cause ignition through hot-surface ignition, would you</p> <p>20 expect that more than one percent of those tractors</p> <p>21 would have caught fire?</p> <p>22 A. Depends upon how egregious the design defect is.</p> <p>23 Q. I'm talking about this design.</p> <p>24 A. This particular one?</p> <p>25 Q. Yeah.</p>
<p style="text-align: right;">Page 198</p> <p>1 A. No.</p> <p>2 Q. Would that testing have confirmed your theory about</p> <p>3 how this fire started?</p> <p>4 A. It may.</p> <p>5 Q. It could have, is that right?</p> <p>6 A. The issue is that thermal imaging really wouldn't work</p> <p>7 where the entrapment area occurs. So I would have to</p> <p>8 rely upon thermocouples being placed in areas of</p> <p>9 entrapment and surrounded by crop debris as part of</p> <p>10 the test.</p> <p>11 Q. So if you had 22, 25 thermocouples spread out in</p> <p>12 various places, that could test what you're talking</p> <p>13 about?</p> <p>14 A. With the benefit of impairment from crop debris, yes.</p> <p>15 Q. Do you believe that the top of the exhaust where the</p> <p>16 stack comes out of the canister, if that -- do you</p> <p>17 believe that area was related at all to the origin of</p> <p>18 this fire?</p> <p>19 A. No.</p> <p>20 Q. Just to be clear, the accumulation of debris alone is</p> <p>21 not evidence of any type of defect, is that correct?</p> <p>22 A. Correct.</p> <p>23 Q. Under NFPA 921, to start a fire you need a fuel source</p> <p>24 and an ignition source, correct?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 200</p> <p>1 A. Again, we have a tractor that's been operated for</p> <p>2 eighteen hundred hours before the fire occurred. So,</p> <p>3 once again, I offer that the defect may exist, but the</p> <p>4 failure may be remote or it may take a special</p> <p>5 consideration, a special occurrence for that to have</p> <p>6 happened. So for this to be a low-level occurrence</p> <p>7 and have the defect still present is not an issue.</p> <p>8 The defect does not require the tractor to</p> <p>9 burn up. The defect can remain and existent and not</p> <p>10 be a hazard to all vehicles.</p> <p>11 Q. And I guess my question is a little bit broader than</p> <p>12 that, is to say if there had only been, say, less than</p> <p>13 ten fires involving this particular design, does that</p> <p>14 demonstrate to you that there's not actually a design</p> <p>15 defect?</p> <p>16 A. No.</p> <p>17 Q. Is it possible to have a design defect and only one</p> <p>18 occurrence happen?</p> <p>19 A. Yes.</p> <p>20 Q. You would agree there was nothing unusual about what</p> <p>21 this farm was using this tractor for in comparison to</p> <p>22 just the general public?</p> <p>23 A. No.</p> <p>24 Q. They didn't have any unique farming operation that</p> <p>25 resulted in extremely high temperatures or extreme</p>

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<p>1 accumulation of debris?</p> <p>2 A. No.</p> <p>3 Q. As far as whether the removal of the front panel and</p> <p>4 the cleaning of the SCR catalyst interferes or</p> <p>5 disrupts with the workday during the day, you would</p> <p>6 have to defer to the operator who actually does that</p> <p>7 task. Is that correct?</p> <p>8 A. Yes.</p> <p>9 Q. You'd agree that a component on a piece of mechanized</p> <p>10 equipment can become hot without being a fire hazard,</p> <p>11 is that correct?</p> <p>12 A. Yes.</p> <p>13 Q. So hot, the phrase "hot" is a relative term to the</p> <p>14 material that's surrounding it, is that correct?</p> <p>15 A. Yes.</p> <p>16 Q. A component can burn skin but not ignite debris, is</p> <p>17 that correct?</p> <p>18 A. Yes.</p> <p>19 Q. Other than referring to the Genesis model and</p> <p>20 comparing the SCR systems and configurations between</p> <p>21 the two models, you haven't done any evaluation of</p> <p>22 alternative designs --</p> <p>23 A. No.</p> <p>24 Q. -- is that correct?</p> <p>25 And you haven't evaluated whether the</p>	<p>1 that they discovered the tractor while on fire, and</p> <p>2 the owner/farmer was able to operate the tractor in</p> <p>3 reverse and drive of the order of 600-some feet while</p> <p>4 the fire was progressing, which suggests to me that</p> <p>5 the general hydraulic system was still intact, the</p> <p>6 engine and operation system, the fuelling system was</p> <p>7 still intact, the engine control module was still</p> <p>8 intact, the operational control connections between</p> <p>9 the cab and the tractor itself were still intact to</p> <p>10 allow it to operate and be controlled.</p> <p>11 So that would suggest to me I don't have a</p> <p>12 failure of another system, fuel-fed system, engine</p> <p>13 component system that is inoperable that would have</p> <p>14 caused the fire.</p> <p>15 BY MR. ROBINSON:</p> <p>16 Q. At the inlet pipe that goes into the SCR canister, is</p> <p>17 there a sensor in that location?</p> <p>18 A. Yes.</p> <p>19 Q. And does that sensor provide any information to the</p> <p>20 operator in the cab?</p> <p>21 A. I don't know.</p> <p>22 Q. If there was a fire in the vicinity of the inlet pipe</p> <p>23 and that sensor, would you have expected there to be</p> <p>24 some alert or malfunction of some type in the cab to</p> <p>25 let the operator know?</p>
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<p>1 Genesis design would have in fact worked with all of</p> <p>2 the other design considerations that went into the</p> <p>3 T8.390, is that correct?</p> <p>4 A. Correct.</p> <p>5 Q. You haven't drafted any type of alternative</p> <p>6 instructions to operators, is that correct?</p> <p>7 A. Correct.</p> <p>8 Q. In this particular case, do you know if the tractor</p> <p>9 still operated after the fire?</p> <p>10 A. Yes.</p> <p>11 Q. It did?</p> <p>12 A. Yes.</p> <p>13 Q. And how does that impact your opinions about what</p> <p>14 caused this fire?</p> <p>15 MR. CORETTI: Hold on, can we get some</p> <p>16 clarification? Are you talking about when they first</p> <p>17 noticed the fire or when this thing is sitting in the</p> <p>18 field, totally consumed? It was burned up. When</p> <p>19 after the fire are you talking about? You said after</p> <p>20 the fire, it could still run.</p> <p>21 MR. ROBINSON: When he was operating it. I</p> <p>22 mean, he did -- somebody did operate this tractor</p> <p>23 after first observation of the fire.</p> <p>24 A. My understanding, from Mr. Wilson's report and</p> <p>25 interview of the operator and the farmer/owner, is</p>	<p>1 A. No.</p> <p>2 Q. Why not?</p> <p>3 A. I believe that sensor is for dosing of the urea, the</p> <p>4 urea agent. So what it's doing is it's monitoring the</p> <p>5 inlet pipe temperature to determine the dosing of the</p> <p>6 urea solution. So that really is measuring the hot</p> <p>7 stream of the exhaust and measuring what's coming out</p> <p>8 of the engine. It's not measuring what's around it.</p> <p>9 Now, if that would fail, fail in operation,</p> <p>10 I would expect it would give a warning to the operator</p> <p>11 that that sensor is not functioning properly, and the</p> <p>12 engine would defer to a limp-home mode to allow it to</p> <p>13 move but not to continue to operate under full load.</p> <p>14 Q. So if there's a fire in the vicinity of the inlet</p> <p>15 pipe, that is originating in that area and burning in</p> <p>16 that area, would you expect that to affect the</p> <p>17 operational capacity of the sensor?</p> <p>18 A. Late in the fire, yes.</p> <p>19 Q. Why do you say "late in the fire"?</p> <p>20 A. The sensor is -- the sensor protrudes into the exhaust</p> <p>21 stream through a pipe boss that's on the inlet pipe</p> <p>22 and appears to be an armored sensor. So, once again,</p> <p>23 this sensor communicates with the fuel mixture. So if</p> <p>24 the tractor's running and operating, all it would do</p> <p>25 would be to reduce power -- reduce fuel consumption so</p>

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<p style="text-align: right;">Page 205</p> <p>1 you can't operate under fuel power. However, the</p> <p>2 operator was simply backing up, so there's really not</p> <p>3 much power being expended in rolling the tractor</p> <p>4 versus operating.</p> <p>5 Q. I understand. I'm talking about -- the sequence of</p> <p>6 events, as I understand it, is the operator's</p> <p>7 operating the tractor, smells smoke, stops, and at</p> <p>8 that point he had never seen any -- no alarms or</p> <p>9 alerts go off in the cab. He gets out. Another</p> <p>10 individual gets in and backs the tractor up, okay?</p> <p>11 Is that your understanding, too?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. That first operator said there were no sensors,</p> <p>14 alarms, no malfunction in any way.</p> <p>15 If the fire started next to the inlet,</p> <p>16 would you have expected it to affect the functionality</p> <p>17 of the engine, such that there would be a sensor to go</p> <p>18 off in the cab?</p> <p>19 A. No, because the configuration of the fuel tank we</p> <p>20 identified earlier shows a confinement entrapment to</p> <p>21 the inboard and rear. The sensor is mounted forward,</p> <p>22 facing front. The fire origin, as I've identified on</p> <p>23 here and I believe Mr. Wilson, is to the rear of the</p> <p>24 SCR canister. So the fire can burn and accelerate to</p> <p>25 the rear of the canister without impairing or damaging</p>	<p style="text-align: right;">Page 207</p> <p>1 A. Yes.</p> <p>2 Q. If a hot ember came from the turbo or manifold and</p> <p>3 landed in debris that's sitting on the transmission, a</p> <p>4 fire could develop in that area while the tractor is</p> <p>5 still operable. Is that correct?</p> <p>6 A. Yes.</p> <p>7 Q. There's no reason that the tractor would just cease</p> <p>8 operating at that point because there's a debris fire</p> <p>9 under the cab?</p> <p>10 A. Correct.</p> <p>11 Q. Do you know which direction the wind was blowing that</p> <p>12 day?</p> <p>13 A. From the north.</p> <p>14 Q. And so if you're -- sitting where the tractor was when</p> <p>15 the first operator exited, how would that wind have</p> <p>16 been moving around the tractor?</p> <p>17 A. I don't recall.</p> <p>18 Q. Given that you believe the fire started on the</p> <p>19 right-hand side of the tractor, over by the</p> <p>20 SCR canister and the fuel tank, if the wind was</p> <p>21 blowing from left to right, perpendicular across the</p> <p>22 tractor, do you believe the fire could still spread</p> <p>23 into the wind towards the left side of the tractor?</p> <p>24 A. Yes.</p> <p>25 Q. And how would it spread that way?</p>
<p style="text-align: right;">Page 206</p> <p>1 the sensor to the front.</p> <p>2 Later on in the fire, when the fuel tank</p> <p>3 let's go and you've got a big ball of fire, oh, yeah,</p> <p>4 of course, it will impair it then.</p> <p>5 Q. Mr. Wilson testified yesterday that the fire actually</p> <p>6 started on the front side of the SCR canister. Do you</p> <p>7 agree with that conclusion?</p> <p>8 A. I do not.</p> <p>9 Q. If the fire started due to a debris accumulation and a</p> <p>10 hot ember that landed in the debris accumulation over</p> <p>11 the transmission, do you believe the tractor would</p> <p>12 have still been operable?</p> <p>13 A. Could you repeat the sequence?</p> <p>14 Q. Sure. Let me back up for a second.</p> <p>15 The transmission on this tractor is located</p> <p>16 generally below the cab, right?</p> <p>17 A. Yes.</p> <p>18 Q. And the transmission is encased in heavy steel, is</p> <p>19 that correct?</p> <p>20 A. Yes.</p> <p>21 Q. Debris can accumulate on top of the transmission,</p> <p>22 correct?</p> <p>23 A. Yes.</p> <p>24 Q. It's got an undulating surface where debris can</p> <p>25 settle, is that correct?</p>	<p style="text-align: right;">Page 208</p> <p>1 A. Fire burns up and out.</p> <p>2 Q. Even in the face of a 20-mile-an-hour wind?</p> <p>3 A. Fire burns up and out.</p> <p>4 Q. Do you know if there was debris accumulated in other</p> <p>5 locations of this tractor besides next to the</p> <p>6 battery -- or next to the fuel tank?</p> <p>7 A. It's a tractor, yes.</p> <p>8 Q. So this tractor was not completely clean, as far as</p> <p>9 you can tell from the photos?</p> <p>10 A. Correct.</p> <p>11 Q. Do you believe that the presence of the debris that</p> <p>12 you've observed on the tractor demonstrates that the</p> <p>13 operator failed to clean it in accordance with the</p> <p>14 instructions?</p> <p>15 MR. CORETTI: What debris are we referring</p> <p>16 to?</p> <p>17 MR. ROBINSON: The debris he just said he</p> <p>18 had seen on the tractor.</p> <p>19 MR. CORETTI: You mean all over the</p> <p>20 tractor?</p> <p>21 MR. ROBINSON: Yeah.</p> <p>22 BY MR. ROBINSON:</p> <p>23 Q. So let me rephrase.</p> <p>24 You testified that there was debris in</p> <p>25 locations other than next to the canister on this</p>

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<p style="text-align: right;">Page 209</p> <p>1 tractor, right?</p> <p>2 A. Based upon your discussion that there was debris on</p> <p>3 the transmission, which I assume was a logical</p> <p>4 interpretation. So I do not have confirmation that</p> <p>5 there's debris on the transmission. It is a farm</p> <p>6 tractor. It's moving in the field. Yes, it will have</p> <p>7 debris on it from operation, which goes back to the</p> <p>8 manufacturer's request to clean it twice daily.</p> <p>9 Q. Sure, and --</p> <p>10 A. What that level of debris is, I can't comment.</p> <p>11 Q. And I think there was some confusion early on. I</p> <p>12 asked if you've observed through photographs or other</p> <p>13 observations if there was debris in other locations on</p> <p>14 the tractor besides the canister.</p> <p>15 A. I did not observe that.</p> <p>16 Q. Okay. Is that because you've in fact looked and there</p> <p>17 is no debris on there, or you just haven't looked to</p> <p>18 see if there's debris in other locations?</p> <p>19 A. I haven't looked to see if there is debris in other</p> <p>20 locations.</p> <p>21 Q. Did you consider origin possibilities other than the</p> <p>22 area next to the SCR canister?</p> <p>23 A. Yes.</p> <p>24 Q. For instance, did you evaluate whether the fire could</p> <p>25 have originated on top of the transmission?</p>	<p style="text-align: right;">Page 211</p> <p>1 still feel like that's consistent with a fire</p> <p>2 originating by the SCR canister?</p> <p>3 A. Could be.</p> <p>4 Q. Explain how.</p> <p>5 A. The direction of the wind, swirling of the wind, how</p> <p>6 the fire's progressing, the non-uniform density of the</p> <p>7 crop debris could form combustion events, puffs, so to</p> <p>8 speak, and if there's a puff that comes out when the</p> <p>9 wind changes direction or swirls around something,</p> <p>10 where that smoke presents itself may appear to come</p> <p>11 from beneath the cab, while in fact it's coming from</p> <p>12 the ventilation openings in the top of the cover.</p> <p>13 Q. So --</p> <p>14 A. So other than seeing where the smoke is truly coming</p> <p>15 from, to say, "I saw it exit from beneath the cab,"</p> <p>16 doesn't tell me it's coming from beneath the cab.</p> <p>17 That's where it was observed from.</p> <p>18 Q. If the fire started next to the SCR canister, wouldn't</p> <p>19 you expect smoke to be coming out of those holes at</p> <p>20 the top where you believe the debris actually went in?</p> <p>21 A. That's not the only opening in that compartment.</p> <p>22 Q. Where are the other openings?</p> <p>23 A. The opening, as well as where the boot comes through,</p> <p>24 where the blanket comes through, that is not a sealed</p> <p>25 compartment. So that is open to the engine</p>
<p style="text-align: right;">Page 210</p> <p>1 A. Yes.</p> <p>2 Q. And did you eliminate that as a potential origin</p> <p>3 location?</p> <p>4 A. Let me stop. I am not a fire investigator. I did not</p> <p>5 determine the origin. In general observation of the</p> <p>6 progression of the fire in the video provided, as well</p> <p>7 as the examination of the artifact after the loss, the</p> <p>8 progression of the fire -- witnessing the fire in</p> <p>9 progress did not appear to have originated under the</p> <p>10 cab in the transmission area.</p> <p>11 Once again, fire burns up and out. And at</p> <p>12 that point in time the fuel tanks were quite involved,</p> <p>13 which is unusual for it to be burning up and out from</p> <p>14 beneath the cab versus somewhere originating near the</p> <p>15 isothermic SCR.</p> <p>16 Q. Okay. Would it change your opinion if the first</p> <p>17 observation of smoke in this case was coming from</p> <p>18 under the cab?</p> <p>19 MR. CORETTI: Assuming a fact not in</p> <p>20 evidence, form of the question.</p> <p>21 BY MR. ROBINSON:</p> <p>22 Q. Would it affect your opinion if the first observation</p> <p>23 of smoke was coming from under the cab?</p> <p>24 A. No.</p> <p>25 Q. If the first smoke was coming from under the cab, you</p>	<p style="text-align: right;">Page 212</p> <p>1 compartment, and smoke could come out of that area, be</p> <p>2 aspirated into the cooling stream, and exit beneath</p> <p>3 what appears to be the cab.</p> <p>4 Q. The vent, air vent on the front that you talked about,</p> <p>5 I think you called it a mail slot in the front --</p> <p>6 A. Yes.</p> <p>7 Q. -- would that have precluded the accumulation of</p> <p>8 debris along the front side of the canister?</p> <p>9 A. Yes.</p> <p>10 Q. And so even over towards the front right, where the</p> <p>11 inlet pipe comes down into the bottom of the canister,</p> <p>12 would you have expected the debris -- and maybe a</p> <p>13 better way to do this is to get a picture and show.</p> <p>14 A. Yes.</p> <p>15 Q. I'm going to hand you what I will mark as Exhibit 38.</p> <p>16 It's a picture from Bill Wilson's report.</p> <p>17 MARKED FOR IDENTIFICATION:</p> <p>18 DEPOSITION EXHIBIT 38</p> <p>19 3:20 p.m.</p> <p>20 BY MR. ROBINSON:</p> <p>21 Q. You'd agree this is the front of the SCR canister,</p> <p>22 with that inlet pipe coming down that's circled with</p> <p>23 the yellow circle, is that right?</p> <p>24 A. Yes.</p> <p>25 Q. So the area along the bottom edge of the SCR canister,</p>

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<p style="text-align: right;">Page 213</p> <p>1 would you expect debris to accumulate in that</p> <p>2 vicinity, given the open mail slot on the front?</p> <p>3 A. The mail slot is linear, goes along the front edge of</p> <p>4 the rectangular platform of the fuel tank. So</p> <p>5 immediately at the front of the SCR, where that mail</p> <p>6 slot is open, I wouldn't expect any accumulation. As</p> <p>7 the SCR is oval, then I would expect that as the ledge</p> <p>8 beneath the SCR is revealed, I can collect debris on</p> <p>9 those ledges.</p> <p>10 Q. So as it starts to turn around, sort of towards the</p> <p>11 back of the tractor, that's where you would expect</p> <p>12 there might be debris, sort of underneath of the</p> <p>13 SCR -- or the inlet pipe?</p> <p>14 A. The diagram I provided earlier of the fuel tank from</p> <p>15 Exhibit 28, on page 3 of Exhibit 28, I've drawn an</p> <p>16 arrow to illustrate where the inlet pipe for the SCR</p> <p>17 existed, and I see that the floor of the fuel tank</p> <p>18 protrudes further forward from the centerline of that</p> <p>19 pipe, which would provide a shelf extending forward of</p> <p>20 the pipe that would be available to collect debris.</p> <p>21 Q. And in that location, where the debris would</p> <p>22 accumulate in that location, there would be airflow</p> <p>23 from the mail slot that would have prevented that</p> <p>24 convection reduction, is that correct?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 215</p> <p>1 book? Have you used it before?</p> <p>2 A. Yes.</p> <p>3 Q. Is it considered a reputable source?</p> <p>4 A. Yes.</p> <p>5 Q. Why is it included in these materials? What was the</p> <p>6 purpose?</p> <p>7 A. For confirming the range of ignition temperatures for</p> <p>8 cellulosic materials.</p> <p>9 Q. Is that something that -- is there a chart in here or</p> <p>10 is there something that shows that?</p> <p>11 A. No, this one you have to read.</p> <p>12 Q. Okay. Do you know if Babrauskas includes a chart at</p> <p>13 some point in his book that describes --</p> <p>14 A. It's full of charts. This particular section you have</p> <p>15 to read.</p> <p>16 Q. Okay. What does, what does this section that you have</p> <p>17 to read demonstrate as far as ignition temperatures of</p> <p>18 cellulosic material?</p> <p>19 A. It discusses smoldering combustion.</p> <p>20 Q. Okay, and what is the conclusion?</p> <p>21 A. Smoldering combustion is a possible ignition</p> <p>22 mechanism.</p> <p>23 Q. At a particular temperature? Does this chapter</p> <p>24 provide a temperature at which smoldering combustion</p> <p>25 can occur on cellulosic material?</p>
<p style="text-align: right;">Page 214</p> <p>1 Q. So the surface temperature of the inlet pipe on that</p> <p>2 side, you would not expect it to be elevated as a</p> <p>3 result of convection reduction?</p> <p>4 A. Correct. Back to your illustration in this</p> <p>5 Exhibit 38, we see the tractor frame rail to the right</p> <p>6 of the view, the inlet pipe as we're seeing</p> <p>7 progressing from the frame rail downward, that</p> <p>8 particular cavity and opening extending into the</p> <p>9 engine compartment is open. There are no guards,</p> <p>10 shrouds, or shields in this area. So if a smoke event</p> <p>11 is occurring within/near the area of the inlet pipe,</p> <p>12 it can be aspirated into this area and travel beneath</p> <p>13 the cab.</p> <p>14 Q. Okay. If the wind was blowing from left to right,</p> <p>15 would you have expected the smoke to emanate that</p> <p>16 direction into the wind and up under the cab?</p> <p>17 A. It depends upon where the smoke traveled to, where if</p> <p>18 it traveled beneath the cab and was entrained in the</p> <p>19 cooling airflow, it could be pushed under the cab, and</p> <p>20 then whichever way it's ventilating or leaving from</p> <p>21 there, whether it's directed by the air stream outside</p> <p>22 or not, I couldn't say. That would have a greater</p> <p>23 control of where the smoke would travel under the cab.</p> <p>24 Q. In your file you had a section of the Babrauskas</p> <p>25 Ignition Handbook. Do you know anything about this</p>	<p style="text-align: right;">Page 216</p> <p>1 A. It provides ranges of temperatures for smoldering</p> <p>2 ignition of various combustible materials.</p> <p>3 Q. Okay, and what is that range?</p> <p>4 A. I do not have that range in front of me. I would have</p> <p>5 to review the document you have in front of you</p> <p>6 yourself. I would have to read.</p> <p>7 Q. If you can find it quickly. I don't want you to have</p> <p>8 to read thirty pages to ...</p> <p>9 A. There's no magic number within here. However, in</p> <p>10 reading on page 318, under the title "Effect of</p> <p>11 Packing Density or Porosity," it states: For the</p> <p>12 smoldering process to be sustained, porosity must</p> <p>13 neither be so low that access of oxygen is too</p> <p>14 difficult, nor so high that excess of heat losses,</p> <p>15 especially from radiation, occur to the external</p> <p>16 atmosphere. Lawson, references 337, explored the</p> <p>17 effect of density on the smoldering ignition of</p> <p>18 cellulose insulation by a cigarette. He found that</p> <p>19 material which was resistant to smoldering ignition at</p> <p>20 a lower density, generally started to smolder if the</p> <p>21 insulation was packed tighter. In the case of one</p> <p>22 material, he also found that further increases in</p> <p>23 density led to non-ignitions, indicating the existence</p> <p>24 of an optimum density for ignition. Palmer also</p> <p>25 reported that a maximum density exists beyond which</p>

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<p style="text-align: right;">Page 217</p> <p>1 smoldering will not propagate. Pyne, et al, suggested 2 that fuel beds will not smolder if porosity is greater 3 than ninety percent.</p> <p>4 So what this is talking about is -- our 5 initial discussions are we have combustible material; 6 it touches something, starts a fire. What this is 7 discussing is we can have a smoldering ignition, 8 similar to the black halo on the other tractor, where 9 it can smolder, and until a packing density, hitting a 10 bump and the pile falls on itself, does it reach the 11 point that it can smolder and ignite.</p> <p>12 It may smolder and self-extinguish. So 13 it's -- again, this comes back to why did this happen 14 on this tractor after eighteen hundred hours. There's 15 a variety of conditions that are available, one of 16 which is a smoldering ignition. No magic number, 17 there's no chart.</p> <p>18 Q. In your report, it says: As crop debris is a 19 cellulosic material, similar to paper or dry peat, 20 autoignition may be achieved at temperatures as low as 21 150 to 229 degrees Celsius.</p> <p>22 But your testimony today is that it 23 actually takes 240 to get autoignition of cellulosic 24 material, correct?</p> <p>25 A. My opinion was at what temperature I believe the</p>	<p style="text-align: right;">Page 219</p> <p>1 and what it offers is such wood products can be heated 2 at temperatures of about 150 C for a year and not 3 ignite, and they gave a threshold of about 220 4 degrees C for which continued exposure does not cause 5 ignition.</p> <p>6 Q. So even this pyrolysis process at 220 would not result 7 in ignition?</p> <p>8 A. This did not incorporate pyrolysis as an instigator, 9 but offered that exposure for these wood products 10 could continue for that period of time.</p> <p>11 Q. Maybe my understanding of pyrolysis is wrong, but I 12 thought Mr. Wilson is saying that pyrolysis affected 13 debris in this case, such that it reduced the ignition 14 temperature of the debris lower than 240 C.</p> <p>15 Is that inconsistent with the report you 16 just showed?</p> <p>17 A. No.</p> <p>18 Q. So the report showed that even at 220 and prolonged 19 exposure to 220 will not result in ignition of crop 20 debris, correct?</p> <p>21 A. No. This is, this is for wood materials, cellulosic 22 materials, but it was wood. No crop debris was used 23 in this.</p> <p>24 Q. Okay, so wood materials did not ignite --</p> <p>25 A. Cellulosic materials did not ignite in this particular</p>
<p style="text-align: right;">Page 218</p> <p>1 ignition could occur.</p> <p>2 Q. Yes.</p> <p>3 A. There are other published sources that show it can 4 fall at a lower temperature. I'm not relying on those 5 lower sources.</p> <p>6 Q. I'm just saying, do you -- this line in your report 7 says it would be 150 to 229 C, and if --</p> <p>8 A. "May be," may be. Not always, not every time, not in 9 this case. May be.</p> <p>10 Q. In your opinion, though, for this debris to have 11 ignited, it would have had to have been 240 C?</p> <p>12 A. That's my opinion.</p> <p>13 Q. You also had -- and I want to make sure we don't lose 14 our exhibits. We have a numbered exhibit over there.</p> <p>15 You provided an article from E.L. Schaffer, 16 S-C-H-A-F-F-E-R, which is Exhibit 26. What was the 17 information you pulled from that article that you 18 needed for your report, if any?</p> <p>19 A. A chart.</p> <p>20 Q. That is a chart?</p> <p>21 A. It has a chart.</p> <p>22 Q. Okay. What was the chart? What does it show?</p> <p>23 A. The chart was an experiment on the cellulosic 24 material, typically wood shavings and fibers, for 25 smoldering ignition in prolonged, low-level heating,</p>	<p style="text-align: right;">Page 220</p> <p>1 case.</p> <p>2 Q. After prolonged exposure to 220 C?</p> <p>3 A. Correct.</p> <p>4 Q. Okay. And how does that help or support your opinions 5 in this case, if any?</p> <p>6 A. Coming back to the threshold of about 240, 232, at 7 which time I believe ignition would occur.</p> <p>8 Q. Okay. We've already talked about Exhibit 29, which is 9 the alternative design of the Genesis model, and then 10 you had Exhibit 27, which is a listing of various 11 models, whether they're Tier 4A or Tier 4B, is that 12 correct?</p> <p>13 A. Correct.</p> <p>14 Q. Okay. You have this "Ignition Time Versus Temperature 15 for Selected Forced Fuels," which is Exhibit 30. It's 16 an article by Guido Kaminski. What was the purpose 17 for including this article in your materials?</p> <p>18 A. It was background information. Also, there's a chart 19 and a table. Within that particular chart, what's key 20 in there is it offers different temperatures for wood 21 materials to ignite.</p> <p>22 Q. Do you --</p> <p>23 A. And wood materials being cellulosic. So if I have a 24 lower temperature, it takes a longer period before the 25 ignition occurs due to heat flux. As the temperature</p>

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<p style="text-align: right;">Page 221</p> <p>1 increases, that dwell time for contact before ignition</p> <p>2 is shortened. That's the purpose of that general</p> <p>3 article.</p> <p>4 Q. Do you compare the corn cellulose material to any of</p> <p>5 these types of wood cellulose materials?</p> <p>6 A. As a family, yes.</p> <p>7 Q. Okay. I thought earlier you were drawing a</p> <p>8 distinction to say that wood cellulosic material is</p> <p>9 different than corn cellulosic material.</p> <p>10 A. It is, but not in terms of combustion.</p> <p>11 Q. Then we have the "Product Improvement Program," which</p> <p>12 is Exhibit 31, dated July 2014. What does this PIP,</p> <p>13 if we can call it that, what does it -- how does it</p> <p>14 influence your opinions in this case?</p> <p>15 A. I'm drawn to the subject line "Excessive heat at the</p> <p>16 muffler inlet connection." What is excessive heat?</p> <p>17 So that's confounding. So in terms of my report, it's</p> <p>18 confounding that there's a PIP related to excessive</p> <p>19 heat at the muffler inlet connection, if that's an</p> <p>20 area where excessive heat is not expected.</p> <p>21 And, further, I'm in an area where I'm</p> <p>22 surrounded by fuel, surrounded by plastic, and I have</p> <p>23 a PIP after the tractor's been in service and on the</p> <p>24 market for three years for excessive heat. They</p> <p>25 didn't know this at the beginning?</p>	<p style="text-align: right;">Page 223</p> <p>1 we've already talked about?</p> <p>2 A. No.</p> <p>3 Q. To what extent are you relying on Mr. Wilson's</p> <p>4 opinions in this case?</p> <p>5 A. I'm relying upon his report for the recounting of the</p> <p>6 interview of the operator and the farmer who drove the</p> <p>7 vehicle while it's on fire.</p> <p>8 Q. Are you relying on him to identify the origin of the</p> <p>9 fire?</p> <p>10 A. No.</p> <p>11 Q. Are you relying on him to identify the cause of the</p> <p>12 fire?</p> <p>13 A. No.</p> <p>14 Q. We can go ahead and pass to Mr. Coretti, and I'll go</p> <p>15 over my notes to make sure I've asked what I need to.</p> <p>16 Thank you.</p> <p style="text-align: center;">EXAMINATION</p> <p>18 BY MR. CORETTI:</p> <p>19 Q. Mr. Dahl, assuming that Alfredo Barnal, the operator</p> <p>20 of the tractor, testified that he removed the shield,</p> <p>21 the SCR shield, and to do so required no tools, would</p> <p>22 that suggest to you that he did not know how to remove</p> <p>23 the shield?</p> <p>24 A. Yes.</p> <p>25 Q. Would that suggest to you that he never removed the</p>
<p style="text-align: right;">Page 222</p> <p>1 Q. So what does it tell you to do?</p> <p>2 A. It talks about insulation blanket material, fire</p> <p>3 prevention, service recommendations, offers the PIN</p> <p>4 numbers in which this is applicable.</p> <p>5 Q. So it talks about putting some type of insulating</p> <p>6 blanket around those hot surfaces?</p> <p>7 A. Correct.</p> <p>8 Q. Do you know if that was ever done on this tractor?</p> <p>9 A. I don't believe so.</p> <p>10 Q. If in fact that PIP was performed on this tractor,</p> <p>11 would that demonstrate to you that the fire did not</p> <p>12 start in the area of the inlet pipe?</p> <p>13 A. Can you repeat the question?</p> <p>14 Q. If in fact the PIP service -- installation of an</p> <p>15 insulating blanket was performed on the inlet pipe,</p> <p>16 would that demonstrate to you that the fire did not</p> <p>17 originate in the vicinity of the inlet pipe?</p> <p>18 A. Yes.</p> <p>19 Q. We have Exhibit 32 and 33, the notes that you provided</p> <p>20 me from Dr. Smith, and 34 is the EPA fact sheet. I</p> <p>21 believe we've already talked about those, and we don't</p> <p>22 need to go over those in any further detail.</p> <p>23 Exhibit 35 is the transmission memo.</p> <p>24 Did you happen to review any other sections</p> <p>25 of the operator's manual besides that safety section</p>	<p style="text-align: right;">Page 224</p> <p>1 shield to clean around the SCR?</p> <p>2 A. Yes.</p> <p>3 Q. And I want you to assume that Arno Schot testified</p> <p>4 that subsequent to the fire at issue, he had another</p> <p>5 fire with another T8, identical place or area, the</p> <p>6 SCR, that he was able to extinguish, and that the</p> <p>7 dealer then told him to take all the SCR shields off</p> <p>8 his remaining tractors, I think he had three or four</p> <p>9 other ones, and not put them back, permanently remove</p> <p>10 them. Would that support your opinions today</p> <p>11 regarding -- you said there was a momma, papa, and</p> <p>12 baby fires. Would that support your opinions today?</p> <p>13 MR. ROBINSON: Object to the form of the</p> <p>14 question.</p> <p>15 A. That activity would have removed the entrapment hazard</p> <p>16 that I have issue with.</p> <p>17 BY MR. CORETTI:</p> <p>18 Q. But the fact that he had another fire in the same</p> <p>19 location, same tractor, how would that -- would that</p> <p>20 support your opinion?</p> <p>21 A. That would further fall along the lines that we have a</p> <p>22 rash, a series of tractors of a similar configuration</p> <p>23 that are developing a fire in the same area, close to</p> <p>24 the exothermic device of the SCR canister.</p> <p>25 Q. Now, the SCR at issue, it's not -- you couldn't test</p>

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<p style="text-align: right;">Page 225</p> <p>1 is now, anyways, because it's not functioning,</p> <p>2 correct?</p> <p>3 A. Correct.</p> <p>4 Q. And did you review any of the warranty repairs that</p> <p>5 have been done to this tractor prior to the fire?</p> <p>6 A. No.</p> <p>7 Q. Were you aware that the SCR system had been repaired</p> <p>8 warranty-wise more than one time?</p> <p>9 A. No.</p> <p>10 Q. If that in fact were true, and suggests some type of</p> <p>11 SCR issues, wouldn't you agree that even if CNH's</p> <p>12 standard operating temperatures were, say, 200</p> <p>13 degrees, would the fact of the actual charring damages</p> <p>14 in other tractors suggest to you that SCR temperatures</p> <p>15 can exceed standards?</p> <p>16 MR. ROBINSON: Object to the form.</p> <p>17 A. I don't know what the standards are, but it would</p> <p>18 suggest to me that in service the temperatures</p> <p>19 exceeded what the manufacturer believed they would be</p> <p>20 in service.</p> <p>21 BY MR. CORETTI:</p> <p>22 Q. Okay. Now, you had referred to that slot in the front</p> <p>23 of the SCR as the mail slot in terms of blocking air,</p> <p>24 getting into the cavity around the SCR?</p> <p>25 A. No, the mail slot allows air to come into the cavity</p>	<p style="text-align: right;">Page 227</p> <p>1 A. If the blanket was intended to cover all of the</p> <p>2 exterior surfaces of the inlet pipe to the SCR and in</p> <p>3 the repair or modification, that the blanket was not</p> <p>4 properly placed once again in position, then that</p> <p>5 would expose the inlet pipe to debris collected in the</p> <p>6 entrapment area.</p> <p>7 BY MR. CORETTI:</p> <p>8 Q. I'm going to show you a copy of photograph 37 from</p> <p>9 Mr. Wilson's dep photographs, and it shows the boot</p> <p>10 around the inlet pipe, with an area exposed that it</p> <p>11 was not covering.</p> <p>12 A. I see the image.</p> <p>13 Q. Okay. And in that type of situation, or in this</p> <p>14 situation, could the temperatures around that inlet</p> <p>15 area have been sufficient to come in -- would it have</p> <p>16 been possible for crop debris to come in contact</p> <p>17 there?</p> <p>18 A. Crop debris could come in contact with this breach</p> <p>19 where the blanket is not covering any of the inlet</p> <p>20 pipe, yes.</p> <p>21 Q. Okay, thank you.</p> <p>22 With respect to the cleaning debris from</p> <p>23 the engine area on the tractor, you can raise the hood</p> <p>24 and get access to the engine on these tractors, can</p> <p>25 you not?</p>
<p style="text-align: right;">Page 226</p> <p>1 around the SCR, at the front.</p> <p>2 Q. Okay, but if you have crop debris that clogged it, if</p> <p>3 there was crop debris all around the -- inside that</p> <p>4 cavity area, blocking the slot, what would the effect</p> <p>5 of that be?</p> <p>6 MR. ROBINSON: Object to the form.</p> <p>7 A. That would impair the convective ventilation. Let me</p> <p>8 further qualify that the opening at the top of that</p> <p>9 assembly is smaller and more restricted than the</p> <p>10 opening at the bottom. So it would be difficult for</p> <p>11 that to become blocked by crop debris.</p> <p>12 BY MR. CORETTI:</p> <p>13 Q. Okay.</p> <p>14 A. I'd prefer to use the term "impossible," but very</p> <p>15 difficult to block in that fashion.</p> <p>16 Q. Okay. Opposing counsel asked you if the tractor at</p> <p>17 issue had the blanket installed on the inlet exhaust</p> <p>18 pipe section, whether or not that would prevent heat</p> <p>19 temperatures or the possibility of the fire starting</p> <p>20 at that point in the tractor, and you testified that</p> <p>21 you believe that that blanket would prevent that.</p> <p>22 What if the blanket was not -- did not</p> <p>23 completely cover the inlet area or became somehow</p> <p>24 degraded?</p> <p>25 MR. ROBINSON: Object to the form.</p>	<p style="text-align: right;">Page 228</p> <p>1 A. Yes.</p> <p>2 Q. So in terms of whether or not everything can be</p> <p>3 exposed to clean, you can expose areas because of the</p> <p>4 way they designed it, hoods opening and compartments</p> <p>5 opening to clean the engine, correct?</p> <p>6 A. Yes.</p> <p>7 Q. If it takes six to eight Allen key bolts to remove the</p> <p>8 shield, does that suggest to you that that's an area</p> <p>9 of the tractor that the manufacturer expects an</p> <p>10 operator to remove two or three times a day or even in</p> <p>11 the field --</p> <p>12 MR. ROBINSON: Object to the form.</p> <p>13 BY MR. CORETTI:</p> <p>14 Q. -- to clean?</p> <p>15 MR. ROBINSON: Objection.</p> <p>16 A. I don't think the manufacturer's provided an easy</p> <p>17 means for removal and re-installation.</p> <p>18 BY MR. CORETTI:</p> <p>19 Q. Although the fuel tank itself did not cause the fire,</p> <p>20 you've testified, would you agree that the -- once the</p> <p>21 fire did break out and breached the fuel tank, it</p> <p>22 accelerated the fire?</p> <p>23 A. Yes.</p> <p>24 Q. Do you know why CNH would not include a fire</p> <p>25 extinguisher in a tractor that costs over \$200,000?</p>

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<p style="text-align: right;">Page 229</p> <p>1 MR. ROBINSON: Object to the form.</p> <p>2 A. I don't know.</p> <p>3 BY MR. CORETTI:</p> <p>4 Q. Do you know whether or not they include a fire</p> <p>5 extinguisher with their tractors?</p> <p>6 A. I do not know.</p> <p>7 Q. I have nothing further.</p> <p>8 RE-EXAMINATION</p> <p>9 BY MR. ROBINSON:</p> <p>10 Q. I just have a few follow-ups and you're done.</p> <p>11 Counsel asked you about repairs that were</p> <p>12 done to the SCR canister, but you don't know what</p> <p>13 repairs were actually done, is that right?</p> <p>14 A. Correct.</p> <p>15 Q. And you don't know whether the repairs in fact</p> <p>16 demonstrate that the SCR canister was operating at a</p> <p>17 higher or lower temperature than appropriate, do you?</p> <p>18 A. I do not.</p> <p>19 Q. So the fact that the repairs occurred are irrelevant</p> <p>20 to whether the canister was operating at excessive</p> <p>21 temperatures, correct?</p> <p>22 A. Correct.</p> <p>23 Q. I also take it you were not aware that the dealer had</p> <p>24 performed repairs on the electrical system to the</p> <p>25 tractor the day before this fire, were you?</p>	<p style="text-align: right;">Page 231</p> <p>1 A. Yes.</p> <p>2 Q. You don't know how the boot was attached before the</p> <p>3 fire, do you?</p> <p>4 A. No.</p> <p>5 Q. And this picture is taken after the fire, is that</p> <p>6 right?</p> <p>7 A. Yes.</p> <p>8 Q. So we've already had a fire that completely consumed</p> <p>9 the whole tractor, including the area and the</p> <p>10 shielding around this particular part of the SCR. Is</p> <p>11 that correct?</p> <p>12 A. All but the boot.</p> <p>13 Q. All but the boot. The boot did not get consumed by</p> <p>14 the fire, is that correct?</p> <p>15 A. Yes.</p> <p>16 Q. So by the time this picture's taken, the fire's</p> <p>17 already occurred, and the fire department has already</p> <p>18 shown up and extinguished the fire, correct?</p> <p>19 A. Yes.</p> <p>20 Q. And we heard yesterday from Mr. Wilson about how the</p> <p>21 fire department's efforts to spray the unit can affect</p> <p>22 the presence of debris in different areas. Do you</p> <p>23 agree with that?</p> <p>24 A. Yes.</p> <p>25 Q. It can also affect the way that particular things,</p>
<p style="text-align: right;">Page 230</p> <p>1 A. I was aware of that.</p> <p>2 Q. Do you know what those repairs were for?</p> <p>3 A. I understand it was a wiring harness.</p> <p>4 Q. Do you have any reason to believe that repair was</p> <p>5 done -- let me restate that.</p> <p>6 Do you have any reason to believe that that</p> <p>7 repair contributed in any way to this fire?</p> <p>8 A. Can you repeat the question?</p> <p>9 Q. Do you have any reason to believe that that repair of</p> <p>10 the wiring harness in any way contributed to the cause</p> <p>11 of this fire?</p> <p>12 A. No.</p> <p>13 Q. You think it's unrelated?</p> <p>14 A. Correct.</p> <p>15 Q. Completely coincidental that it happened the day</p> <p>16 before this fire?</p> <p>17 A. Yes.</p> <p>18 Q. Counsel asked you a couple of questions about</p> <p>19 picture 37 from Bill Wilson's report, and he showed</p> <p>20 you an area that appears to be exposed, is that</p> <p>21 correct?</p> <p>22 A. Yes.</p> <p>23 Q. And then I think the question was, that area</p> <p>24 demonstrates that debris could accumulate and make</p> <p>25 contact with the inlet pipe. Is that correct?</p>	<p style="text-align: right;">Page 232</p> <p>1 such as boots, are attached and how they're</p> <p>2 positioned, correct?</p> <p>3 A. Yes.</p> <p>4 Q. So the presence of a gap in this photograph does not</p> <p>5 demonstrate that there was a gap before the fire, is</p> <p>6 that correct?</p> <p>7 A. That's a reasonable assumption.</p> <p>8 Q. And, in fact, if there had been debris accumulated</p> <p>9 against this gap which ignited due to contact with the</p> <p>10 inlet pipe there, wouldn't we expect to see some level</p> <p>11 of residual debris burned or caked on to that metal?</p> <p>12 A. I don't know.</p> <p>13 Q. Would there be some evidence that the debris would</p> <p>14 have been attached to the metal if it was exposed</p> <p>15 before the fire and that's where the fire started?</p> <p>16 A. I don't know, because if the fire department</p> <p>17 extinguished the fire and sufficiently displaced the</p> <p>18 boot, they could also displace any debris in the area.</p> <p>19 So it's a disturbed area.</p> <p>20 Q. Okay. So we can't draw any conclusions from this</p> <p>21 photograph?</p> <p>22 A. I can't draw any conclusions regarding debris that was</p> <p>23 in that area.</p> <p>24 Q. Do you know what these threads are made out of that</p> <p>25 are on the boot?</p>

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<p style="text-align: right;">Page 233</p> <p>1 A. I do not.</p> <p>2 Q. Do you know if they're combustible or not?</p> <p>3 A. Obviously not.</p> <p>4 Q. If the fire was located in this area and it started</p> <p>5 there, would you have expected these threads to burn</p> <p>6 if they were combustible?</p> <p>7 A. If they were combustible, yes.</p> <p>8 Q. You mentioned that if the manufacturer provided six to</p> <p>9 seven Allen screws to attach that plate to the front</p> <p>10 of the SCR panel, that -- do you remember that</p> <p>11 discussion?</p> <p>12 A. Yes.</p> <p>13 Q. Do you know how many actual Allen screws it takes to</p> <p>14 remove that front panel?</p> <p>15 A. No.</p> <p>16 Q. And you mentioned that it would -- the presence of six</p> <p>17 or seven would demonstrate that it's difficult to</p> <p>18 remove. Is that correct?</p> <p>19 A. As a readily-serviceable item, yes. So if I need to</p> <p>20 service this more than once a day, I'm in the field,</p> <p>21 six or seven Allen screws are readily dropped and lost</p> <p>22 in the crop field, where snap-over center buckles or</p> <p>23 larger thumb screws or hand-wheel screws are easier to</p> <p>24 handle and easier to recover.</p> <p>25 Q. Is it the number or the type of fasteners that make</p>	<p style="text-align: right;">Page 235</p> <p>1 MARKED FOR IDENTIFICATION:</p> <p>2 DEPOSITION EXHIBIT 39</p> <p>3 3:52 p.m.</p> <p>4 MR. ROBINSON: All right, I think we are</p> <p>5 done.</p> <p>6 (The deposition was concluded at 3:52 p.m.</p> <p>7 Signature of the witness was not requested by</p> <p>8 counsel for the respective parties hereto.)</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 234</p> <p>1 the difference?</p> <p>2 A. The type.</p> <p>3 Q. So if they had four, you would still have the same</p> <p>4 opinion?</p> <p>5 A. Yes.</p> <p>6 Q. But as far as whether in fact it was a hassle and</p> <p>7 disruptive to actually remove the panel, you would</p> <p>8 have to defer to the operator who does that on a daily</p> <p>9 basis?</p> <p>10 A. Yes.</p> <p>11 Q. And if the operator said it's not difficult and not</p> <p>12 disruptive to remove that panel, you would have to</p> <p>13 agree with the operator?</p> <p>14 A. I would defer to the operator.</p> <p>15 Q. Okay. I don't have any further questions.</p> <p>16 MR. CORETTI: Do you want to make that an</p> <p>17 exhibit, what we were just talking about?</p> <p>18 MR. ROBINSON: Sure, why don't we make --</p> <p>19 it's already an exhibit, I think, in his whole ...</p> <p>20 MR. CORETTI: Yeah, but just because I'm</p> <p>21 thinking we were referring to it.</p> <p>22 MR. ROBINSON: While we're still on the</p> <p>23 record, I think we're at 39, so let's mark this as</p> <p>24 Exhibit 39.</p> <p>25</p>	<p style="text-align: right;">Page 236</p> <p>1 CERTIFICATE OF NOTARY</p> <p>2 STATE OF MICHIGAN)</p> <p>3) SS</p> <p>4 COUNTY OF KENT)</p> <p>5</p> <p>6 I, REBECCA L. RUSSO, certify that this</p> <p>7 deposition was taken before me on the date</p> <p>8 hereinbefore set forth; that the foregoing questions</p> <p>9 and answers were recorded by me stenographically and</p> <p>10 reduced to computer transcription; that this is a</p> <p>11 true, full and correct transcript of my stenographic</p> <p>12 notes so taken; and that I am not related to, nor of</p> <p>13 counsel to, either party nor interested in the event</p> <p>14 of this cause.</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21 <i>Rebecca L. Russo</i></p> <p>22 REBECCA L. RUSSO, CSR-2759</p> <p>23 Notary Public,</p> <p>24 Kent County, Michigan.</p> <p>25 My Commission expires: 6-3-2023</p>

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